



Accelerating for a Better Tomorrow

Corporate Presentation
February 2023

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JSW Group Overview



**Amongst India's leading
Conglomerates with a
turnover of US\$22 Bn**



JSW Energy

- Power producer with 9.9 GW locked-in portfolio,
- Targeting 20GW by 2030 (81% renewable capacity)
- Market Cap: ~US\$ 4.6 Bn



Infrastructure

- Amongst **Top 5** Indian port companies
- Operates environment-friendly seaports & terminals
- Targeting 200mtpa cargo handling capacity in next few years



Paints

- India's new age Paints company offering a path-breaking Any Colour at One Price
- State-of-the-art Facilities in Maharashtra and Karnataka
- Ranks Number 1 in Industrial Coil Coatings



Sports

- Supporting Indian sports ecosystem
- Teams Owned: Bengaluru FC, Delhi Capitals, Haryana Steelers



Steel

- India's leading integrated steel producer
- Installed crude steel capacity of 29.2mtpa, growing to 38.5mtpa
- Market Cap: ~US\$ 21.4 Bn



Cement

- India's leading Green cement company
- Current capacity of 17mtpa, with a medium term target of 25mtpa
- Product range includes PSC, GGBS, Concrete & Construction Chemicals



Ventures

- Early-stage, tech-focused, VC fund
- Portfolio: Purple, LimeTray, Homelane, CureSkin and Zvlov



Foundation

- Social development arm of JSW Group
- Footprint across 11 states and 15 districts
- Positively impacts more than a million lives across India



JSW Energy : Our Vision



**Bringing positive transformation to
every life we touch**

JSW Energy : Transitioning towards green energy

FY2025

To become a 10 GW company

FY2030

To become a 20 GW company

FY2050

To become carbon neutral by 2050

Electrons to Molecules

Foraying into products and services through energy storage solutions, green hydrogen and its derivatives

Agenda

JSW Energy at a Glance

Sustainability

Strategy & Vision

Asset Overview

Why JSW Energy?

Risk Mitigation

Annexures

JSW Energy – At a Glance

The company is well placed to achieve its capacity growth target of 10 GW much ahead of the stated timeline of FY25 and being future-ready with increased share of renewables and new energy solutions.

9.9 GW

=

4.8 GW

+

3.3 GW

+

1.8 GW

Diversified Asset Portfolio
(61% Renewable)

Installed Capacity

- Thermal – 3,158 MW
- Hydro – 1,391 MW
- Solar – 235 MW
- Wind – 27 MW

Under Construction

- Entirely Renewable – 2,206 MW

Acquired

- Ind-Barath Thermal Power - 700 MW

In Pipeline

- Entirely Renewable – 426 MW

Under Acquisition

- Mytrah Energy RE assets- 1,753 MW

Healthy Operations and Financials (4.8 GW Operational)

85%

Capacity under LT PPA¹

~95%

EBITDA contribution from LT

21BUs

Net Generation

₹ 2,625 Cr

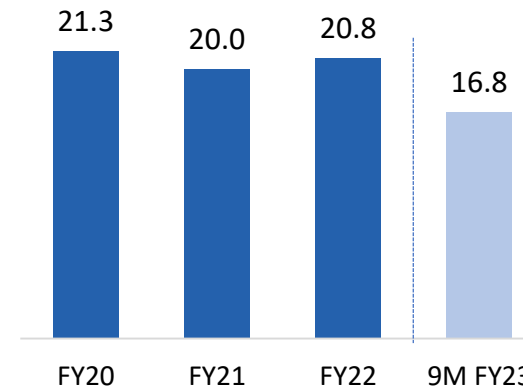
Cash PAT²

Figures are for FY22

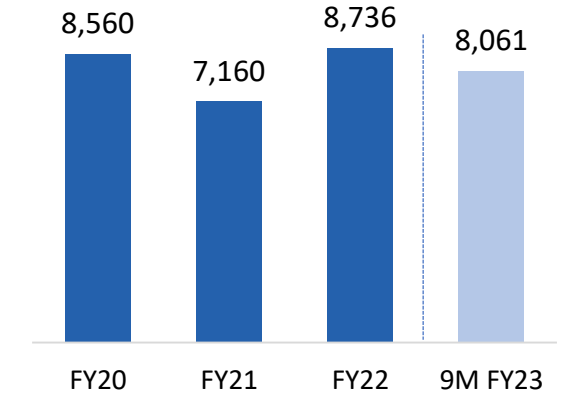
- Steady operations and robust financial: Track record of strong yearly cash profits of ~₹2,300 Crores.
- High LT PPA tie-up rendering high cash flow visibility
 - Almost all LT PPA under two-part tariff (imported/domestic fuel cost/forex pass through)
 - Remaining Avg. Life of PPA: ~19 years
 - Remaining Avg. Life of Assets: ~28 years
- Diversified off-takers
 - All plants placed favorably in Merit Order Despatch
 - Hydro projects under 'must-run' status
 - Consolidated Trade receivables at ₹ 1,628 Cr equaling to 69 receivable days as on Dec 31, 2022

Resilient business model with steady cashflow generation despite sectoral headwinds

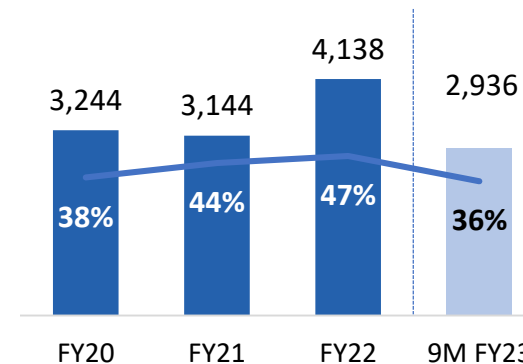
Net Generation (BUs)



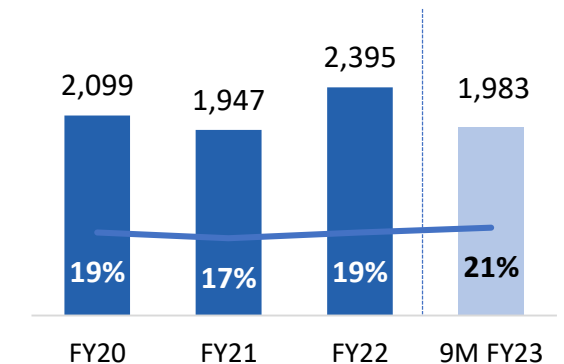
Total Income³ (₹ Crore)



EBITDA & EBITDA Margin (₹ Crore)



Cash PAT² (₹ Crore) and Return on Adj.Net Worth



Robust balance sheet to support renewable-led growth

2.30x

Net Debt/EBITDA

0.54x

Net Debt/Equity

8.29%

Wt. average cost of debt

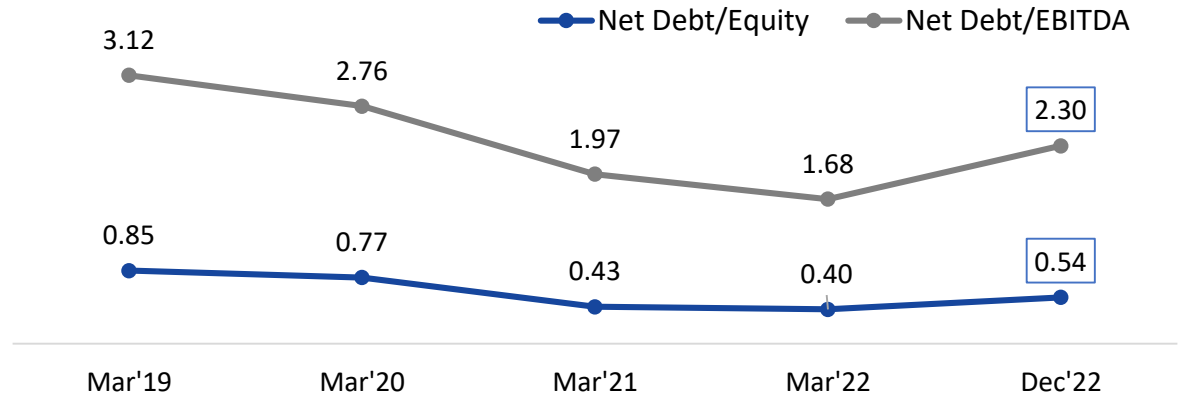
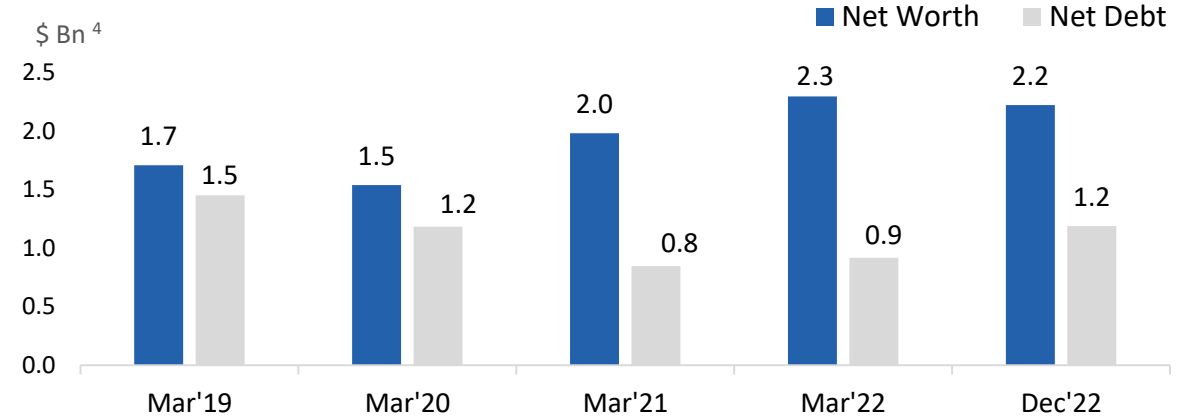
69

Receivable Days

Figures as of Dec 31, 2022

- ✓ Strong Liquidity with healthy cash balances: ₹ 3,029 Crore (**\$ 366 Mn³**)
- ✓ Financial flexibility enhanced by equity investments:
 - Holding 7Cr (70mn) JSW Steel shares of Value¹: ₹ 5,379 Cr (**~\$650 Mn³**)
- ✓ Healthy Credit Ratings:
 - India Rating & Research: AA (Stable outlook)
 - ICRA Ltd: ICRA AA (Stable)
- ✓ Access to diverse pools of liquidity
- ✓ Existing portfolio of 4.8 GW generating healthy CF & mid-teen equity IRR²
- ✓ Weighted average cost of debt is 8.29% as of Dec 31, 2022

Large balance sheet headroom & strong cashflow available to pursue growth



ND/EBITDA for Operational Projects at 1.5x (Dec-22)⁵

1 Value of JSW Steel Share holdings as on Dec 31, 2022. Net Worth is impacted by change in value of listed equity investments through Other Comprehensive Income,

2. Calculated as FCFE Yield on Adj. NW is ~14%; Adj NW : Net worth adjusted for non-strategic equity investments held

3. 1 USD =82.7 INR

4 Conversion based on USD = INR spot rate as of respective date

5. Based on net debt for operational projects of ₹3,365 crores; total net debt at the group level stands at ₹9,840 crores on Dec-22.

Sustainability at JSW Energy



Continuing our Health & Safety Excellence Journey



Zero severe injuries/fatalities (Q3 FY23 & YTD)



92% of contractors covered by JSW CARES audit

9 Contractors achieve 5 Star rating & 3 contractors achieve 4 Star in a stringent Internal Safety Assessment



63,000+ Cumulative Safety Observations Resolved YTD

Influencing 'positive safety behavior' of our workforce by reporting smallest of the safety considerations thereby avoiding any major / minor incident



474 employees enrolled for 'Safety Champion Program' as per British Safety Council (BSC) Certification

474 employees across all major locations enrolled for Safety Champion Program covering 10 safety high standard eLearning modules with final examination conducted in association with BSC

Enhancing Safety Understanding of Contractor Employees



- Barmer – Mock drill on fire in lignite conveyor belt and primary crusher conducted. Health and safety training on PPE and 10 critical rules undertaken
- Vijayanagar – On site 'emergency mock drill' conducted
- Ratnagiri – 'Mass tool box talk' on electrical portable tools safety conducted
- Baspa – Conducted a training session on "Fire Safety- Fire Prevention and Fire Fighting"

Awards & Recognitions



Council of Enviro Excellence



Sustainability: Framework and Policies

17 Focus Areas with 2030 Targets from 2020 as Base Year

<p>Climate Change: Committed to being carbon neutral by 2050 Reduce our carbon emissions by more than 50%</p>	<p>Renewable Power: Enhance the renewable power to 2/3rd of our Total Installed Capacity</p>	<p>Biodiversity: No Net Loss for Biodiversity</p>
<p>Waste Water: Zero Liquid Discharge</p>	<p>Waste: 100% Ash (Waste) utilization</p>	<p>Water Resources: Reduce our water consumption per unit of energy produced by 50%</p>

Operational Health & Safety	Resources	Social Sustainability	Local Considerations	Indigenous People	Human Rights
Supply Chain Sustainability	Employee Wellbeing	Air Emissions	Business Ethics	Cultural Heritage	Energy

Aligned to National & International Frameworks



Governance & Oversight by Sustainability Committee

2 Independent Directors	Mr. Sunil Goyal
	Ms. Rupa Devi Singh
1 Executive Director	Mr. Prashant Jain

ESG Ratings – best amongst peers

MSCI : BB

CDP* : A- (Leadership Level)

Sustainalytics: 27.8 (Medium Risk)

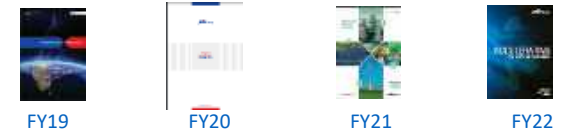
FTSE4Good Index constituent

Carbon Neutrality by 2050



Committed to set science based targets to keep global warming to 1.5°C under SBTi

Integrated Reporting since FY19



*based on CDP climate change rating 2022. CDP water security rating 2022 is B (Management)

Sustainability: Targets and Strategy

SD Targets		FY20 Actuals	FY30 Targets	Improvement	Strategic Initiatives and Approach
Climate Change	<ul style="list-style-type: none"> GHG Emissions tCO₂e/ MWh 	0.76	0.304	60%	<ul style="list-style-type: none"> Increased share of renewable energy for deep decarbonization Process efficiency improvements Replacement of condenser tubes with graphene coatings
	<hr/>				
Water Security	<ul style="list-style-type: none"> Specific fresh water intake (m³/MWh) 	1.10	0.591	46%	<ul style="list-style-type: none"> Maintaining zero liquid discharge across operations Optimising utilisation of rain water harvesting system Installation of technology for operating cooling towers with higher Cycles of Concentration with modified chemical regime Reuse of treated effluent of Sewage Treatment Plan for horticulture
	<hr/>				
Waste	<ul style="list-style-type: none"> Specific Waste (Ash) Generation (t/MWh) 	0.070	0.032	54%	<ul style="list-style-type: none"> Integrated Strategy towards efficient waste management Optimizing utilisation of low ash coal
	<ul style="list-style-type: none"> Waste Recycled - Ash (%) 	100	100	-	
<hr/>					
Air Emissions	Specific process emissions(Kg/MWh)				<ul style="list-style-type: none"> Ensuring ESP (Electrostatic Precipitator) Fields availability Optimising Lime dozing system efficiency Process efficiency improvements
	<ul style="list-style-type: none"> PM 	0.16	0.053	67%	
	<ul style="list-style-type: none"> SOx 	1.78	0.683	61%	
	<ul style="list-style-type: none"> NOx 	1.01	0.373	63%	
<hr/>					
Biodiversity	<ul style="list-style-type: none"> Biodiversity at our operating sites 	-	Achieve 'no net loss' of biodiversity		<ul style="list-style-type: none"> Continue to enhance Biodiversity at all our locations and operations to achieve 'no net loss' Increase green cover across operations Eco-system studies (all seasons) in progress for finalising a Bio-diversity management plan at Barmer location.

Sustainability: Q3 FY23 Performance

Key Highlights



Climate Change

- TCFD assessment initiated by reputed ESG consultant
- Value Chain survey of suppliers initiated for assessment of supply chain sustainability.
- Increased share of renewable energy for deep decarbonization
- Wind Projects –SECI X – Progressive Commissioning Started



Water Security

- Maintain zero liquid discharge across operations
- Reuse of treated effluent of Sewage Treatment Plant for horticulture
- Plan to review & improve water monitoring methodology by 3rd party to measure inconsistencies



Waste

- Ash silo (45000 MT) completed in Ratnagiri. Testing & Commissioning in progress.
- Continue 100% Ash utilization initiatives at all plants through tie-ups with cement factories & similar businesses



Air Emissions

- Ensuring ESP (Electrostatic Precipitator) Fields availability
- Process efficiency improvements
- Lime Dozing system availability and parameters optimization at Barmer for reduced air emissions

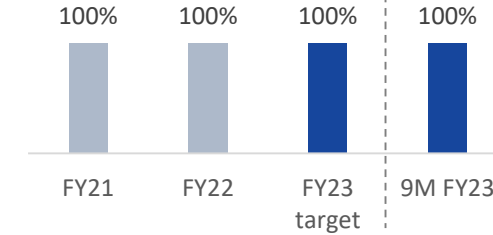


Biodiversity

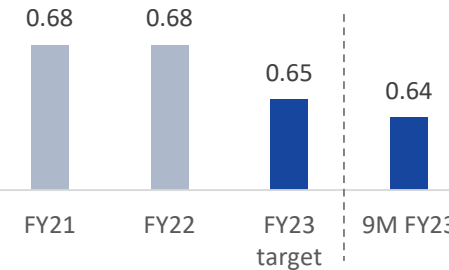
- Eco-System Study at Barmer - Summer and monsoon season report submitted by CII team. Winter assessment in progress.
- Biodiversity Assessment and Management Plan - Initiated the process at all the plants

Performance

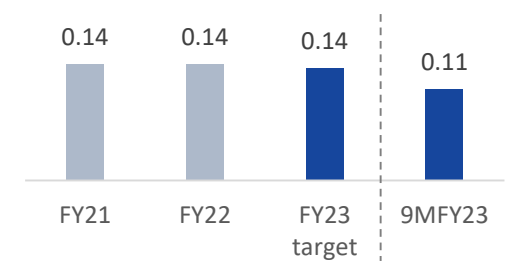
Ash Utilisation (%)



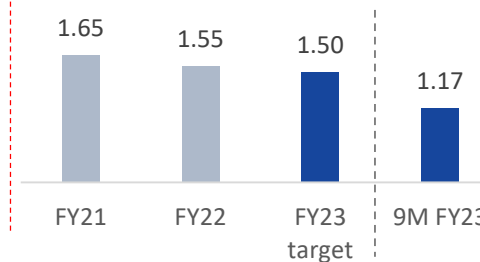
CO2 intensity (tCO2e/MWh)



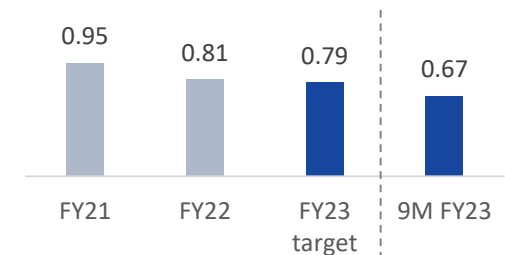
PM Emissions (kg/MWh)



SOx Emissions (kg/MWh)



NOx Emissions (kg/MWh)

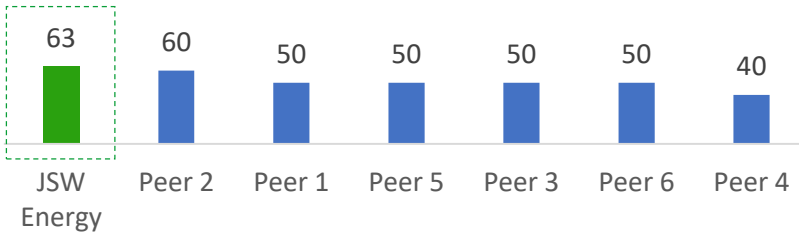


Advantage JSW: Superior ESG Profile

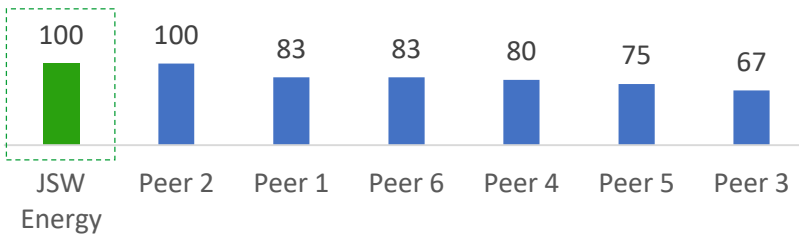


Board & Governance

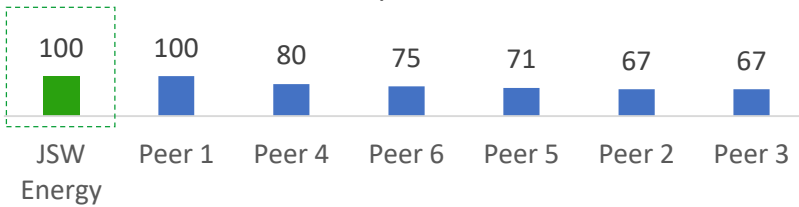
% Board Independent



% Audit Committee Independent

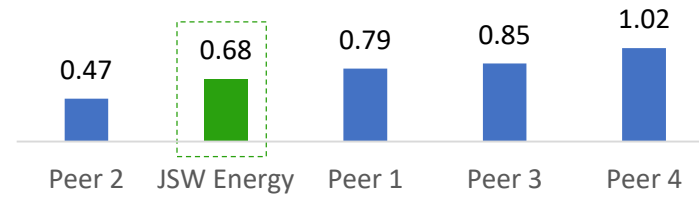


% Nomination & Remuneration Committee Independent

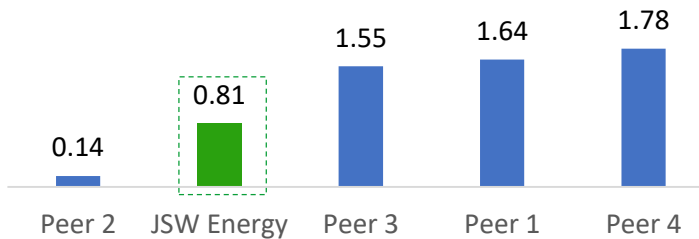


Air Emissions

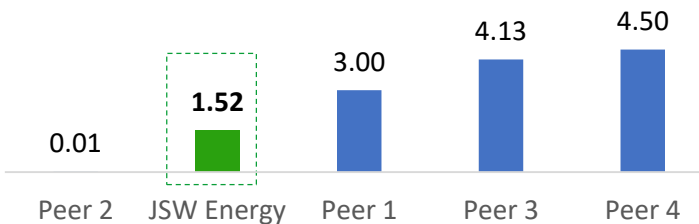
CO2 Intensity (t CO2e/MWh)



Specific NOx Emissions(Kg/MWh)



Specific SOx Emissions(Kg/MWh)

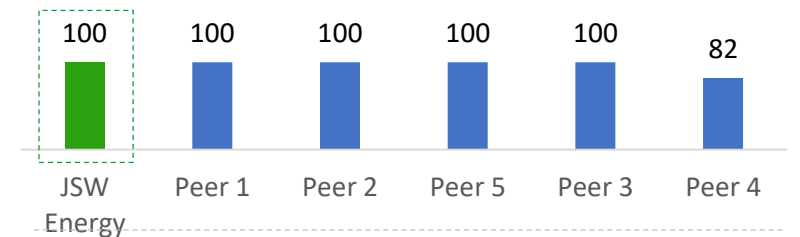


Water & Waste Management

Specific Fresh Water Consumption (m3/MWh)



Ash Utilisation (%)



ESG Ratings



Entity	CDP Rating
JSW Energy	A-
Peer 6	C
Peer 1	B
Peer 3	B
Peer 4	D
Peer 2	F
Peer 5	F



Entity	MSCI Rating
JSW Energy	BB
Peer 6	A
Peer 1	BBB
Peer 3	CCC
Peer 4	CCC

Sustainability: Initiatives and Disclosures



- ✓ Assessment initiated by reputed ESG Consultants.
- ✓ Increased focus on achieving climate change target of 2030 and subsequently of becoming Carbon Neutral by 2050.

Task Force on Climate related Financial Disclosures

Sustainability Assessment for Supply Chain and Biodiversity Assessment for all plants Initiated

Plantation drives spanning across Vijayanagar, Barmer & Hydro Power Plants

Comprehensive ESG Data profile with ~300 factors across 15 sustainability frameworks

[JSW Energy](#)



[JSW Hydro Energy](#)



Sustainability: Empowering Our Communities



Sports Promotion & Development

- **Project Shikhar:** Bringing powerful transformation in the field of sports with Project Shikhar
- Shikharite won the silver medal in the 6th Elite Women's National Boxing Championship, held at Bhopal from 20th to 26th December, 2022



Health & Nutrition

- Total 3,725 individuals across Dharapuram (TN) and Ratnagiri (MH) screened at camps for eye problems, 634 received eye glasses.
- 2,089 patients benefitted through ambulatory services in Barmer (RJ), Kutehr (HP), Ratnagiri (MH)



Education

- 15,760 children from Zila Parishad and other schools benefited through various education initiatives in Ratnagiri
- 16 Schools from Zila Parishad and other schools benefited through infrastructure interventions in Ratnagiri



Community Development & Support

- **Project Margdarshak:** To empower rural India with access to applicable welfare schemes of central and state governments. 5,000 individuals got access via this program.
- **Solar Street Lights:** Installed 236 solar street lights in in Barmer, Kutehr, Dharapuram and Tuticorin.



[Health & Nutrition](#)



[Water & Environment](#)



[Waste Management](#)



[Agri-livelihoods](#)



[Education](#)



[Women's BPO & Livelihoods](#)



[Skill Enhancement](#)



[Art, Culture & Heritage](#)



[Sports](#)

Strong Board Oversight and Leadership



Mr. Sajjan Jindal
Chairman & Managing Director



Mr. Prashant Jain
Joint Managing Director & CEO



Mr. Pritesh Vinay
Director (Finance)



Mr. Parth Jindal
Non-Executive, Non-Independent Director



Ms. Rupa Devi Singh
Independent Director



Mr. Sunil Goyal
Independent Director



Mr. Munesh Khanna
Independent Director



Mr. Rajeev Sharma
Independent Director



Mr. Desh Deepak Verma
Independent Director

- **Majority Independent Board: 5/9 Directors are Independent**
- **Fully Independent Audit and Remuneration Committees**

- Audit Committee
- Compensation & nomination & remuneration Committee
- Risk management Committee
- Stakeholder's relationship Committee
- Corporate social responsibility Committee
- Sustainability Committee
- Permanent invitees to Sustainability Committee

Our Core Principles



Accountability



Social Responsibility



Transparency



Environment



Integrity



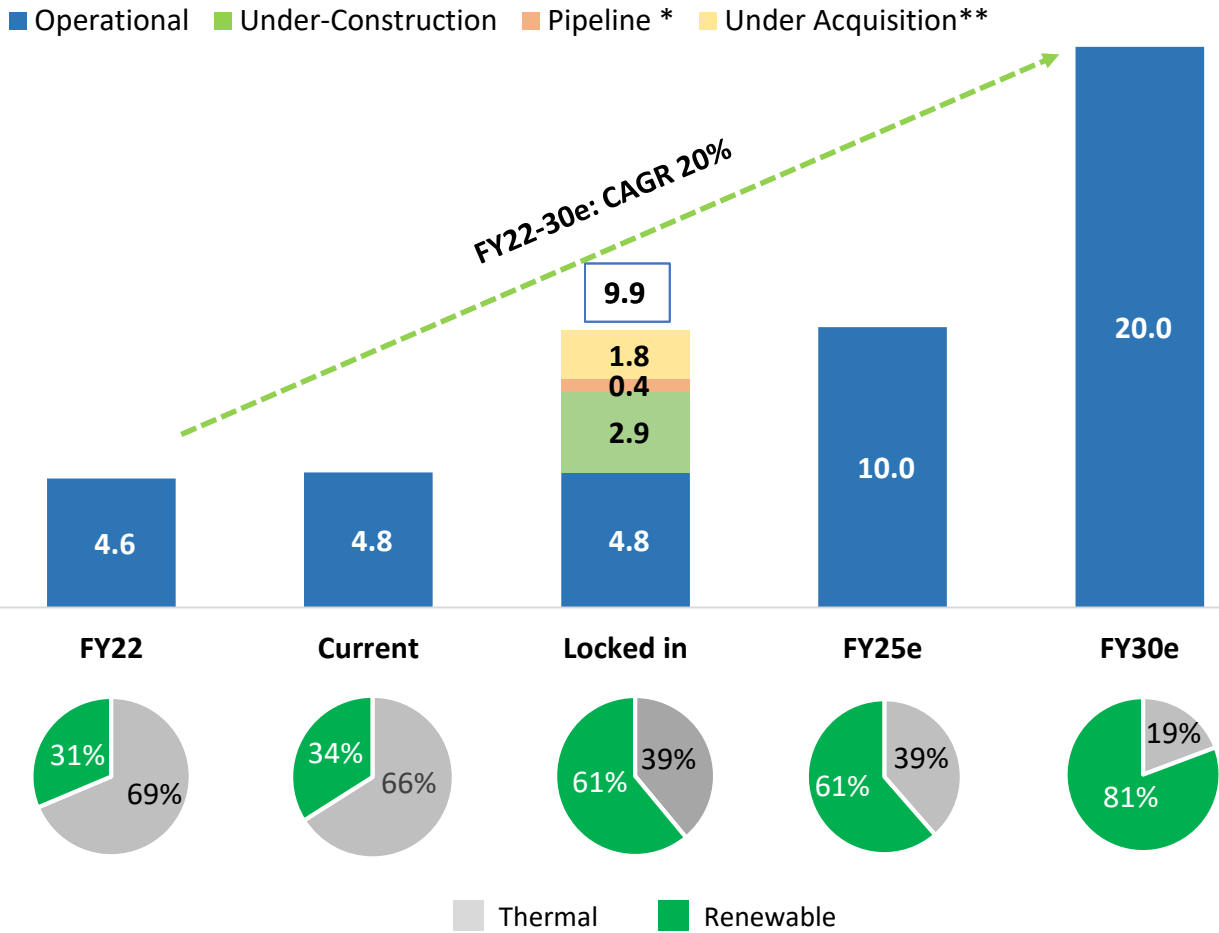
Regulatory Compliance

Vision and Strategy



Site Bridge: Karcham Wangtoo (1,091MW)

Scaling towards 20 GW installed capacity by 2030



Transitioning towards Energy Products and Services



Energy Storage



Hydro Pumped Storage (PSP) - Targeting 10 GW

- Resources tied-up for ~7.6 GW (~50 GWh) PSP in various states



Battery Energy Storage System (BESS)

- Received LoA for SECI BESS project of 500MW/1000MWh



Electrons to Molecules

Green Hydrogen /Ammonia

- Intend to foray into production of Green Hydrogen and its derivatives

Current locked-in capacity of 9.9 GW; Comprising of 61% Renewable capacity

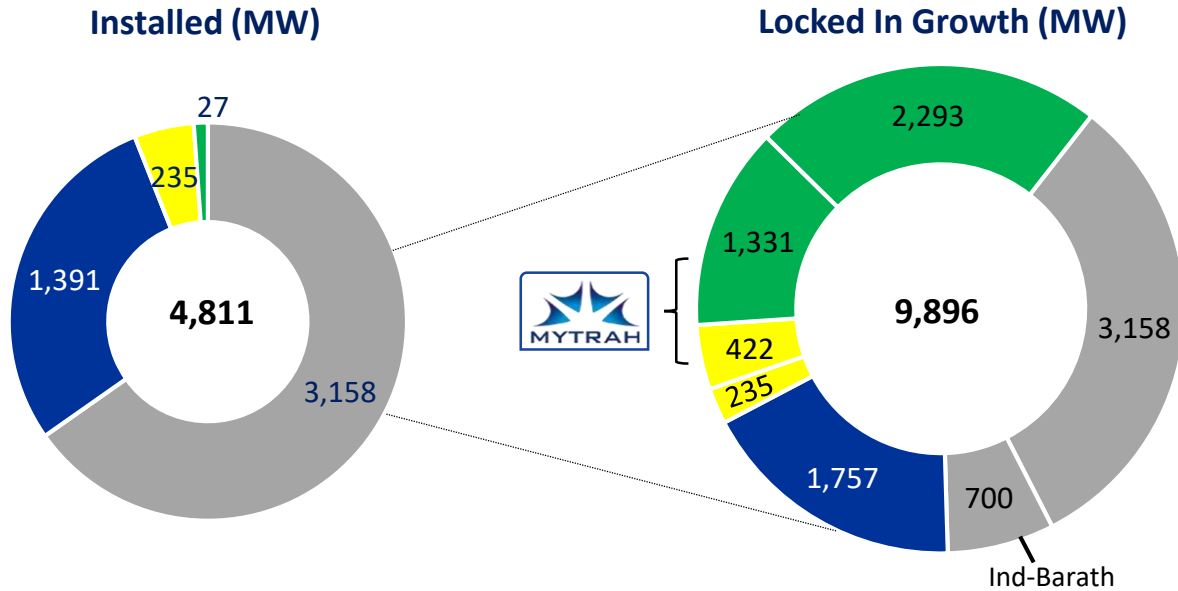
Net-zero by 2050

Asset Overview



Asset Overview – 9.9 GW Locked-In

Green portfolio driving capacity growth



Group Captive 28%

Group Captive 21%

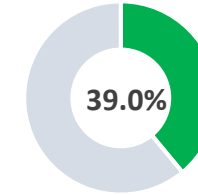
■ Hydro ■ Thermal ■ Wind ■ Solar

Total locked-in capacity (9,896) MW
Renewable constitutes 61% of total locked-in capacity

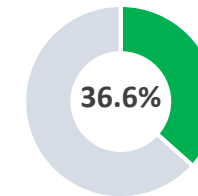
Division of locked-in capacity (9,896) MW



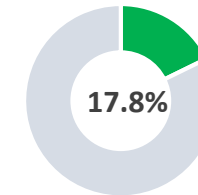
Thermal



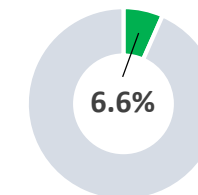
Wind



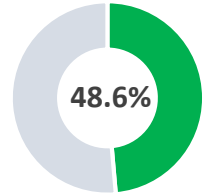
Hydro



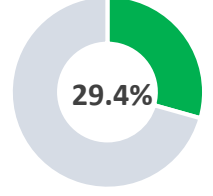
Solar



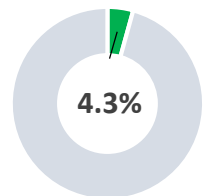
Installed



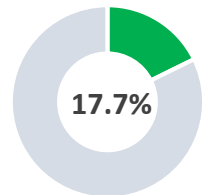
Under-construction



Pipeline



Under-acquisition



Locked In 9.9 GW

Installed Capacity 4.8 GW

Under construction & Pipeline 3.3 GW

Under Acquisition 1.8 GW

Installed Portfolio – 4.8 GW

Barmer: 1,080MW

- **Configuration:** 8 X 135MW
- **Units operating:** since 2009³
- **Technology:** Sub-critical pithead Lignite based TPP
- **Fuel Source:** Captive Lignite mines of BLMCL¹
- **Power Offtake:** Long Term PPA : 100%
- **Project Cost:** INR 7,165 Crore/ \$866mn²

Ratnagiri: 1,200MW

- **Configuration:** 4 X 300MW
- **Units operating:** since 2010³
- **Technology:** Sub-critical TPP
- **Fuel Source:** Imported Thermal Coal
- **Power Offtake:** Long Term PPA: 91%
- **Project Cost:** INR 5,516 Crore/ \$667mn²

Nandyal: 18 MW

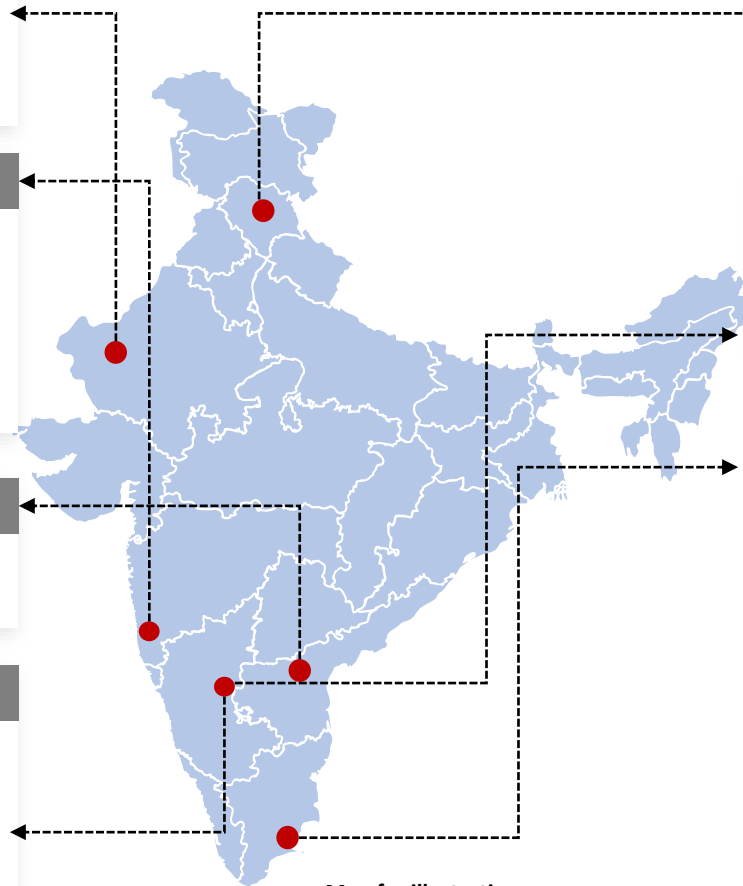
- 1x18MW Thermal Power Plant
- 100% LT PPA under Group Captive scheme

Vijayanagar: 860 MW

- **Configuration:** 2 X 130MW and 2 X 300MW
- **Units operating:** since 2000³
- **Technology:** Sub-critical TPP
- **Fuel Source:** Imported Thermal Coal & Gas
- **Power Offtake:** Long Term PPA : 39%
- **Project Cost:** INR 3,096 Crore/ \$374mn²

4.8 GW installed

34% Renewable
66% Thermal



Map for illustrative purposes, showing project locations

Baspa II: 300MW & Karcham Wangtoo: 1,091MW⁴

- **Configuration:** 3x100MW (Baspa II) ; 4x272.75MW (Karcham)
- **Units operating:** Baspa II since 2003³ and Karcham Wangtoo since 2011³
- **Technology & Fuel Source:** Hydro
- **Power Offtake:** Long Term(1300MW), Short Term(45MW)
- **Asset Value to JSW Energy:** INR 9,275 Crore/\$1,121mn²

Solar: 10 MW

- Ground based and rooftop solar power projects across various locations with captive power tie-up within JSW Group

Vijayanagar Solar: 225 MW

- **Configuration:** 225 MW AC
- **Power Offtake:** PPA with JSW Steel

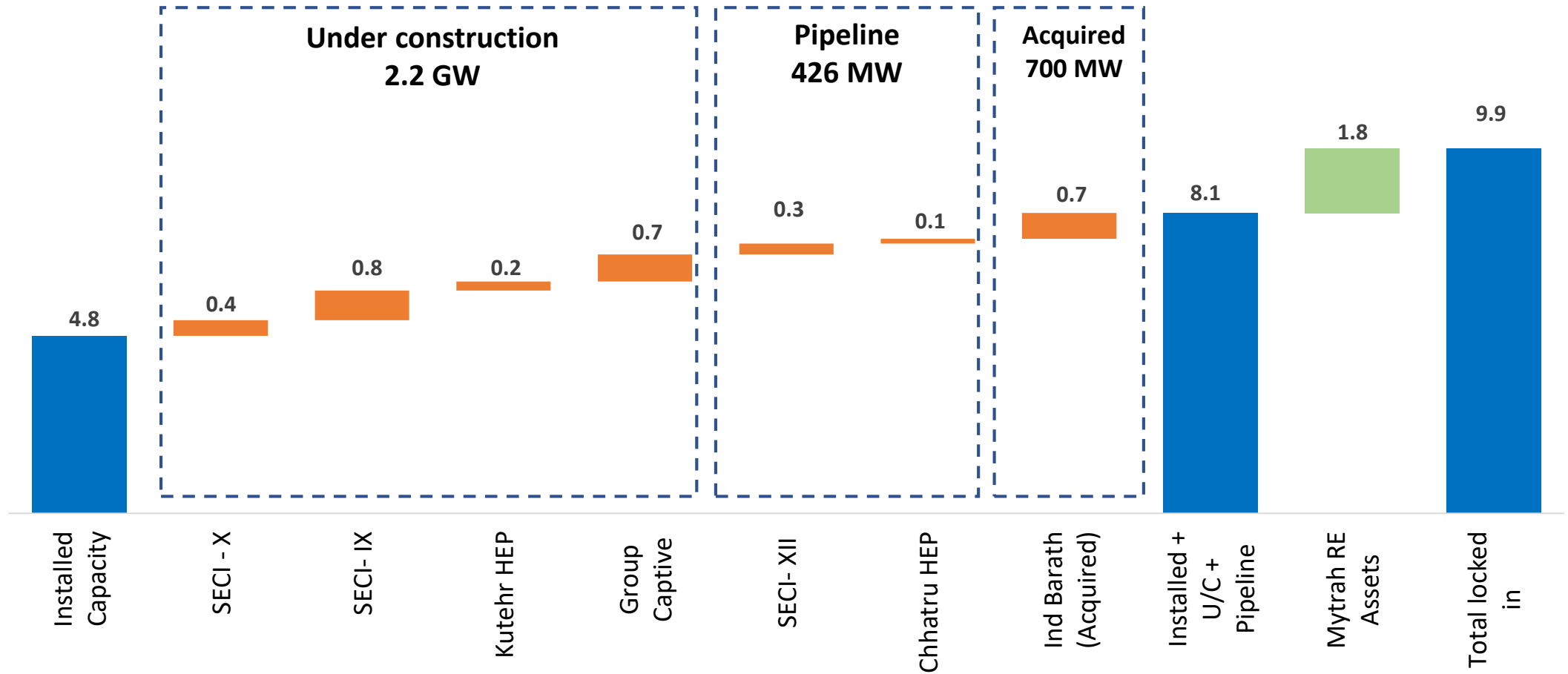
SECI X Wind : 27 MW

- **Configuration:** 450 MW (Part commissioning of 27 MW)
- **Power Offtake:** PPA with SECI

Remaining Avg. Life of PPA: ~19 years
Remaining Avg. Life of Assets: ~28 years

1. Long term FSA with BLMCL for supply of lignite from its captive mines
2. USD/ INR = 82.7
3. Denotes start of first unit in respective calendar year; TPP – Thermal Power Plan
4. Current approved operational capacity at 1,045 MW. CEA approval received for uprating from 1,000 MW to 1,091 MW, in a phased manner over CY21 and CY22

3.3 GW Projects - Under construction | Pipeline | Acquired



2.2 GW of Renewable Projects Under Construction | 700 MW of Thermal (acquired) | 426 MW Projects in Pipeline*

*LoA/LoI received

Locked In 9.9 GW

Installed Capacity 4.8 GW

Under construction & Pipeline 3.3 GW

Under Acquisition 1.8 GW

Under Construction Projects – 2.2 GW



Map for illustrative purposes, showing project locations

Under-Construction:
 1,966 MW *
 240 MW

Under Construction Portfolio						
Plant	Capacity (MW)	Segment	Location	PPA/Offtaker	Scheduled Commissioning	Target Commissioning
SECI - IX	810	Wind	Tamil Nadu	25-Year; SECI	Dec-23	progressively from Q3 FY23
SECI - X	450	Wind	Tamil Nadu	25-Year; SECI	Jun-23	
Group Captive – JSW Steel	733	Wind	Karnataka, Maharashtra & Tamil Nadu	25-Year; JSW Steel	NA	progressively from Q1 FY24
Kutehr	240	Hydro	Himachal Pradesh	35-Year; Haryana Discom	-	Sep-24

Metrics for RE projects (Incl. 225 MW of solar projects commissioned at Vijayanagar)

Blended tariff ₹ 3.08/unit (excl. hydro)

PPA PPAs Signed

Capex

- Total : ~ ₹ 16,660 Crore
- Committed: ~ ₹ 11,650 Crore
- Spent: ~ ₹ 5,500 Crore

* Excludes 27MW of SECI X Wind project for which part-CoD has been received

Update on Under Construction Projects (1/2)

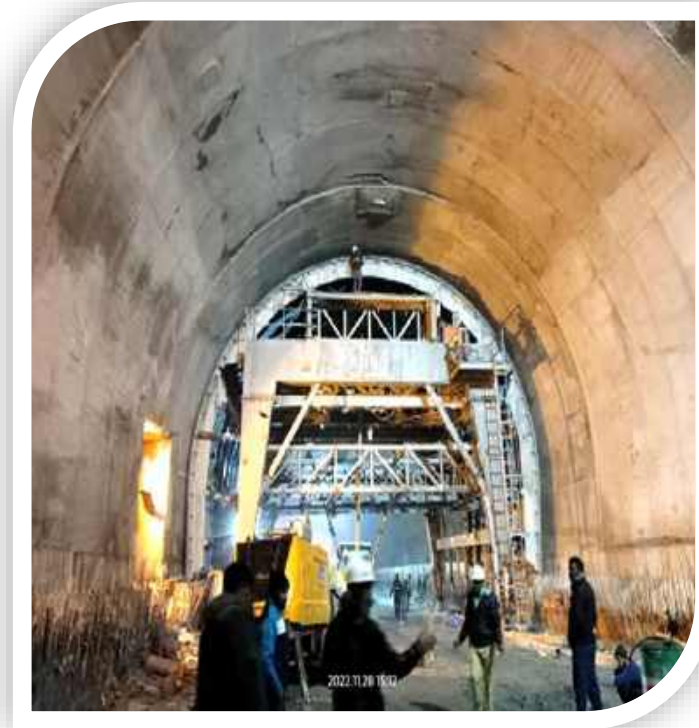
SECI-IX & X Wind, Tamil Nadu (1,260 MW)



Blades and WTG erection followed by progressive commissioning (27MW commissioned)

Update on Under Construction Projects (2/2)

Kutehr HEP, Himachal Pradesh (240MW)



Completed ~90% (19.0 km) tunneling work (up from ~84% in Q2) well ahead of timelines

Downstream Left Half Barrage

DC Chamber lining in progress

HRT concrete lining

Locked In 9.9 GW

Installed Capacity 4.8 GW

Under construction & Pipeline 3.3 GW

Under Acquisition 1.8 GW

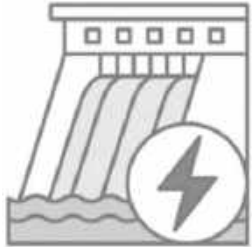
Generation

426 MW Pipeline Projects



SECI XII Wind

- Letter of Award received in Jul-22 for 300 MW ISTS connected Wind power capacity

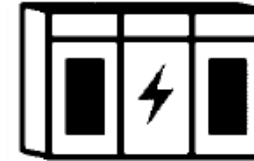


Chhatru Hydro Power Plant

- Letter of Intent received in Oct-22 for allotment of 126 MW Chhatru HEP
- Leveraging expertise on executing large hydro projects

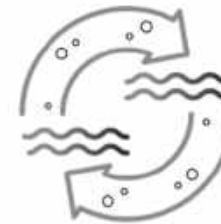
Storage Systems

Battery Energy Storage System



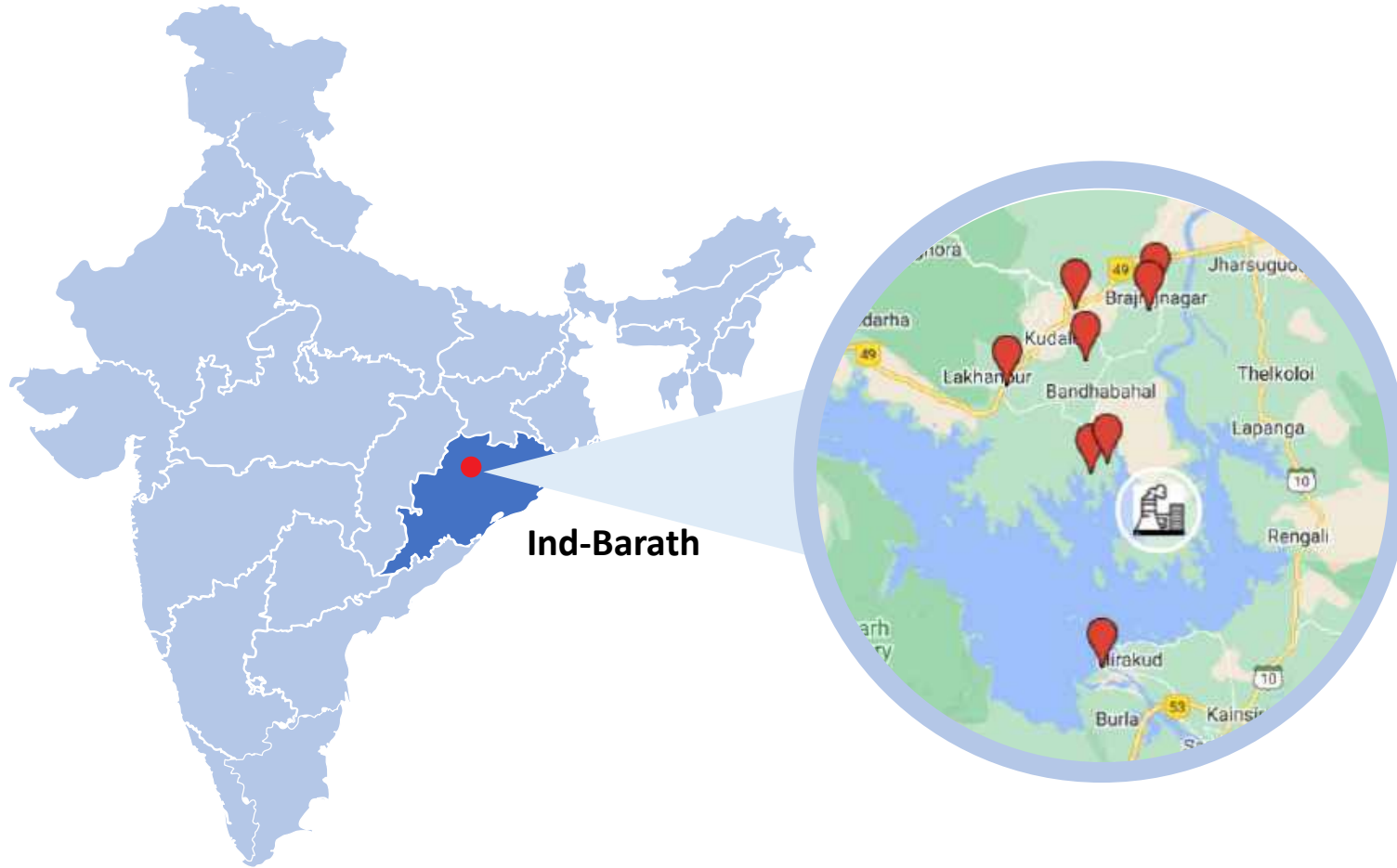
- Letter of Award received in Jan-23 for 500 MW /1000 MWh Battery Energy Storage Systems from SECI

Pumped Hydro Storage



- Approvals and preparatory works in progress for ~7.6GW (~50 GWh); MoUs/LoI signed
- First project will be a captive PSP at Vijayanagar (Karnataka)
 - Construction expected to commence in CY2023

Acquired - Ind-Barath 700 MW



Ind-Barath

Maps for illustrative purposes, showing project locations

Ind-Barath: Asset Overview

- **Location:** Jharsuguda, Odisha
- **Configuration:** 2 x 350 MW | Thermal Power Plant
- **Technology:** Sub-critical TPP
- **Fuel Source:** Domestic coal
- Transaction completed in Dec-22

Acquisition Rationale

- Attractive purchase consideration of ₹1,048 crore; further capex envisaged
- Located near the coal rich belt of IB Valley of Mahanadi Coalfields
- Ease of water access, from Hirakud Dam
- Optionality of varied offtake arrangements
- Accessibility: Rail: (Belpahar), Airport: (Raipur) and Port: (Paradip)

Locked In 9.9 GW

Installed Capacity 4.8 GW

Under construction & Pipeline 3.3 GW

Under Acquisition 1.8 GW

Mytrah Acquisition at Advance Stage

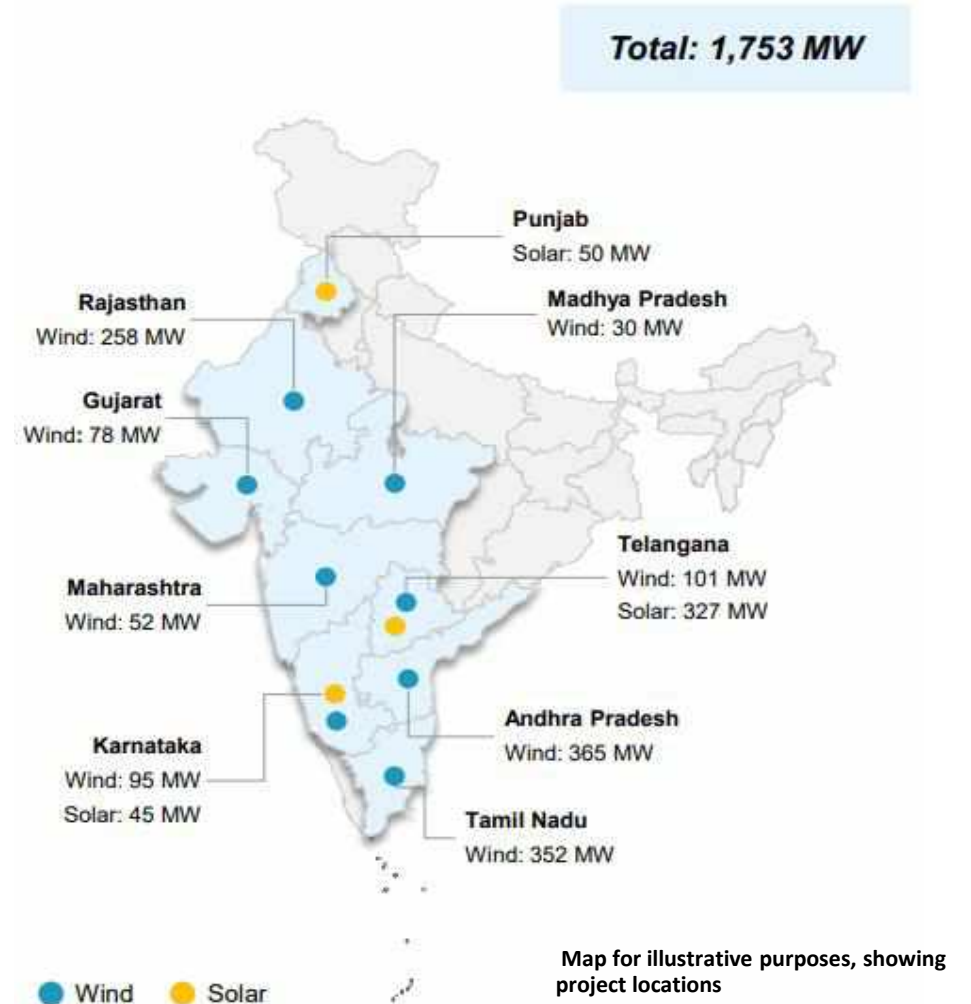
Value Accretive Deal

- ✓ Acquired portfolio consists of 422 MW solar and 1,331 MW wind
- ✓ The assets were acquired at an EV of approximately ₹ 10,530 Cr after adjusting for net current assets implying a EV/EBITDA multiple of 6.4x on a normalized EBITDA of ₹ 1,650 Cr

Progress Update on Acquisition

- ✓ Received CCI approval for acquisition
- ✓ Progressing towards completion of other conditions precedent and expect consummation of the deal in Q4 FY23.

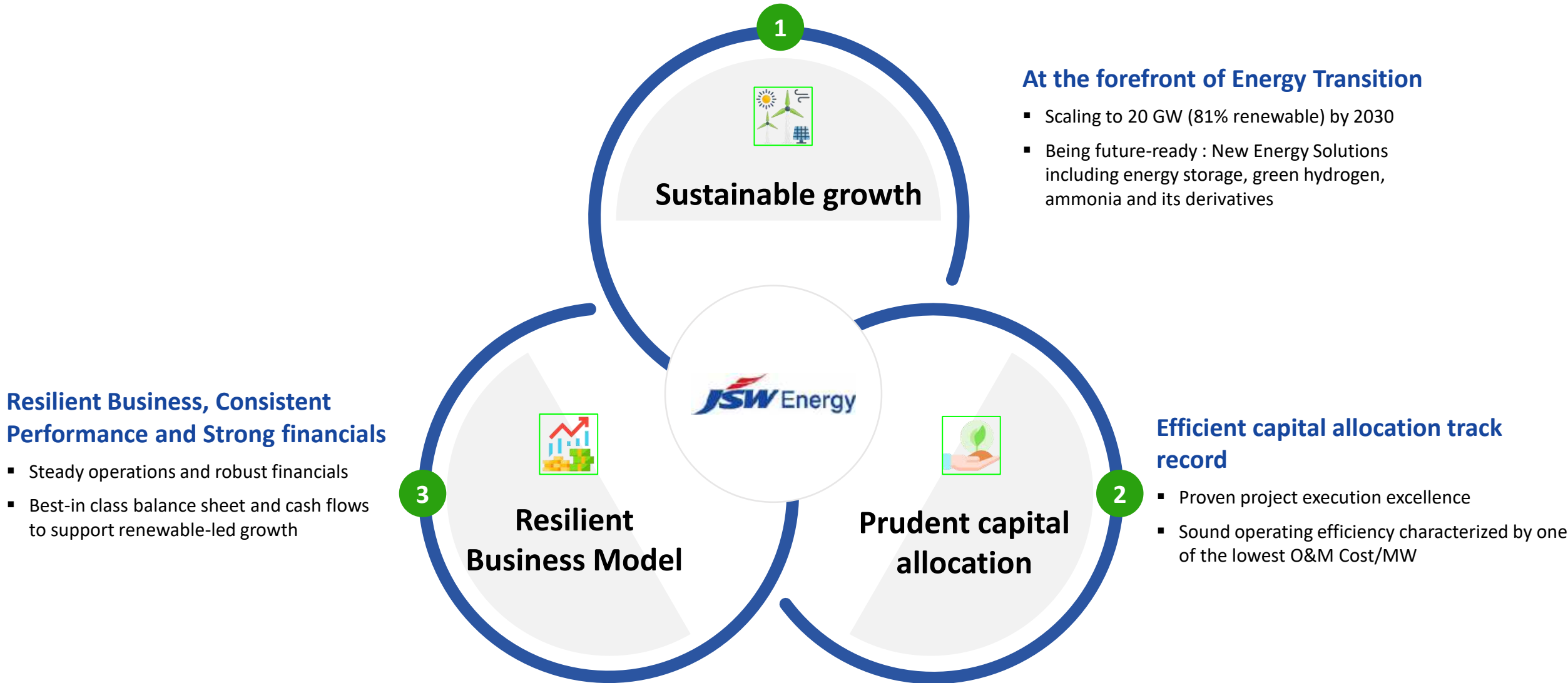
Mytrah RE Assets: Geographically diverse



Why JSW Energy ?

An aerial photograph of a large dam and reservoir. The dam is a long, concrete structure with several spillways. The reservoir is a large body of water, appearing greenish-brown. The surrounding area is hilly and has some vegetation. A prominent blue diagonal line runs across the image from the bottom left towards the top right.

Committed to reaching
Net Zero emissions by 2050



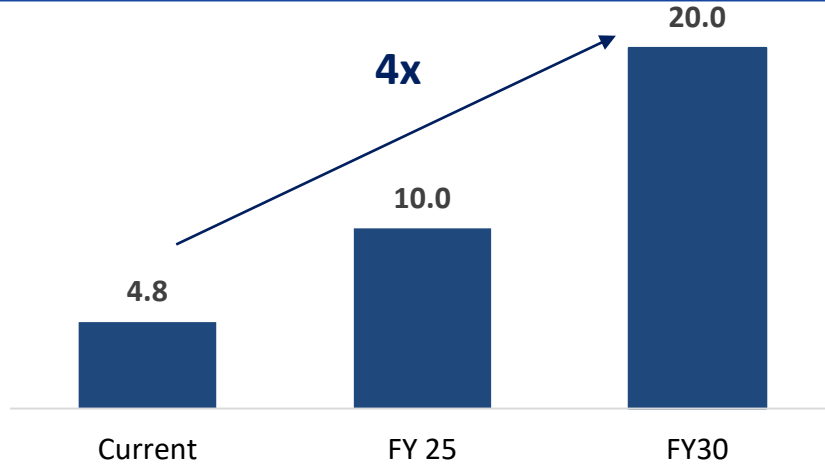


At the forefront of Energy Transition

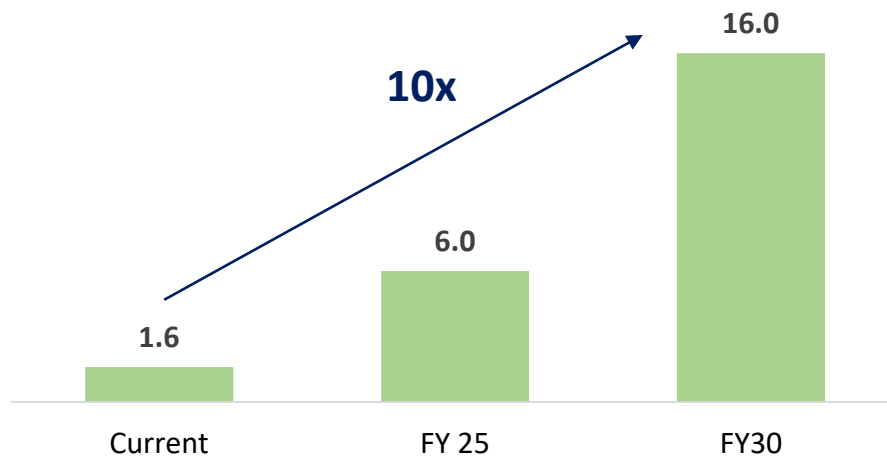
- Scaling to 20 GW (81% renewable) by 2030
- Being future-ready : New Energy Solutions including energy storage, green hydrogen, ammonia and its derivatives

Scaling to 20 GW by 2030

JSW Energy Ltd



JSW Neo Energy (Green Platform)



Ahead of FY25 capacity target

Well ahead of near term target of 10 GW capacity by FY25...
...While foraying into Energy Storage projects (BESS & PSP)

Growth driven by...



Strong Balance Sheet

Net debt/EBITDA 2.30x

Net debt/Equity 0.54x as on Dec-22



Sufficient Internal Accruals

Steady operations:

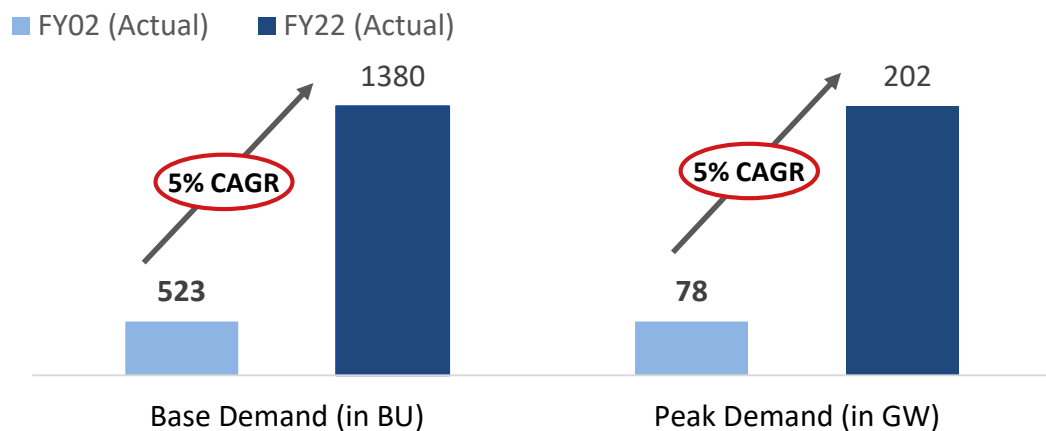
Track record of strong yearly cash profits of ~₹2,300 Cr

Strong Liquidity with healthy cash balances: ₹3,029 crore

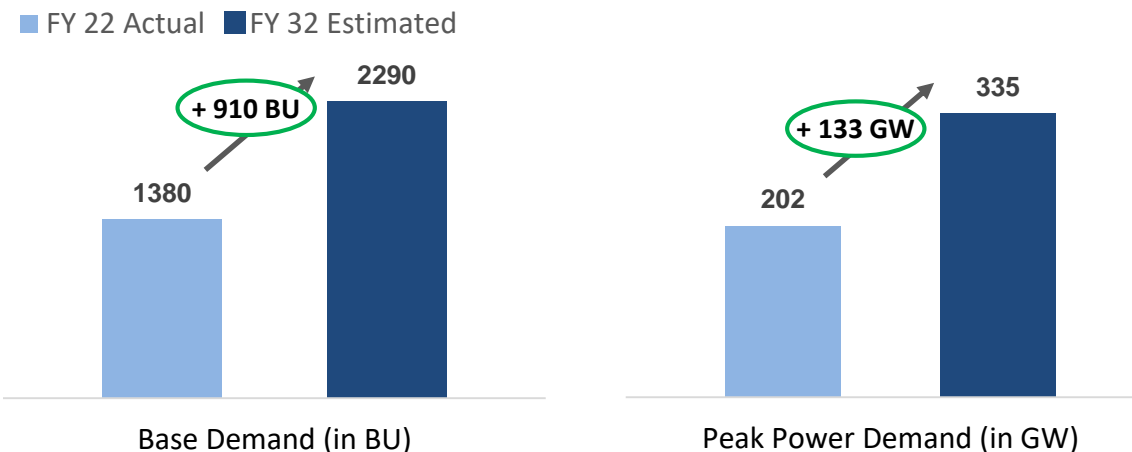
JSW Steel shares worth ₹5,379 crore

Significant Market Opportunity: Power Demand Growth to be met by RE

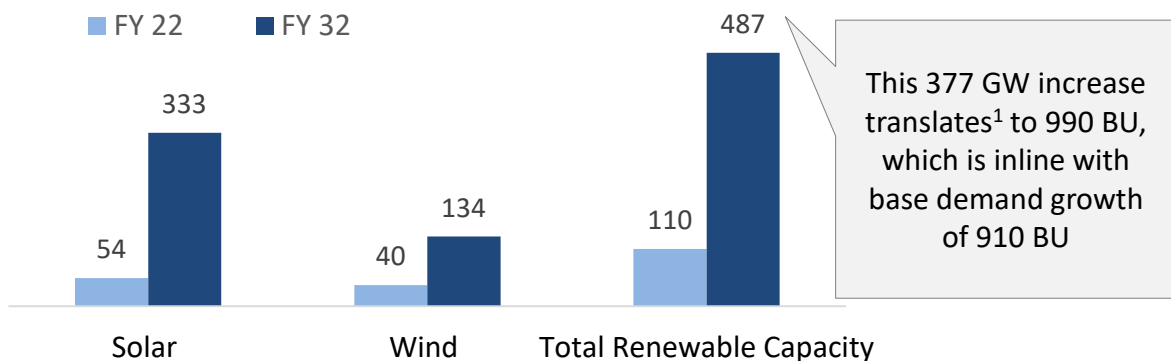
Historical Power Demand Growth



Similar growth expected in power demand over next decade



Demand to be met incrementally with Renewable Energy



Rapid Urbanization and universal electrification to drive power demand



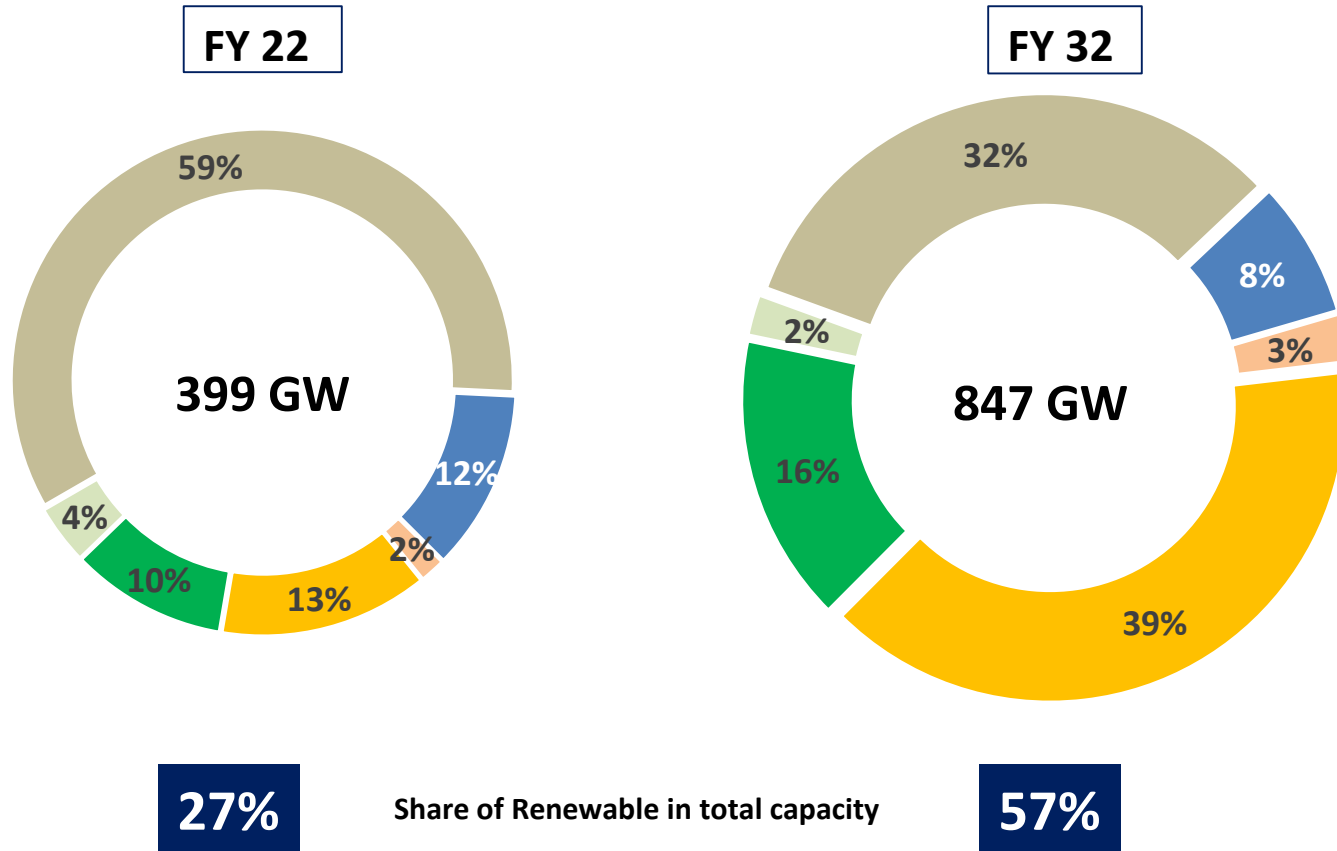
India's is world's third largest power producer, however has a low per capita consumption (~1/3rd of world average), this provides huge opportunity for growth



Sustained economic growth has driven power demand in India, going forward, unlocking of demand from increased rural electrification and rapid urbanization to drive demand for power

Capacity growth in the next decade of to be driven majorly by renewables

Share of Renewables is projected to increase from 27% in FY 22 to 57% in FY 32



Factors key for growth of renewables



Capital Adequacy

- Availability of debt at lower interest rates



Policy Support

- Tariff related support for renewables
- PLI for Solar PV modules



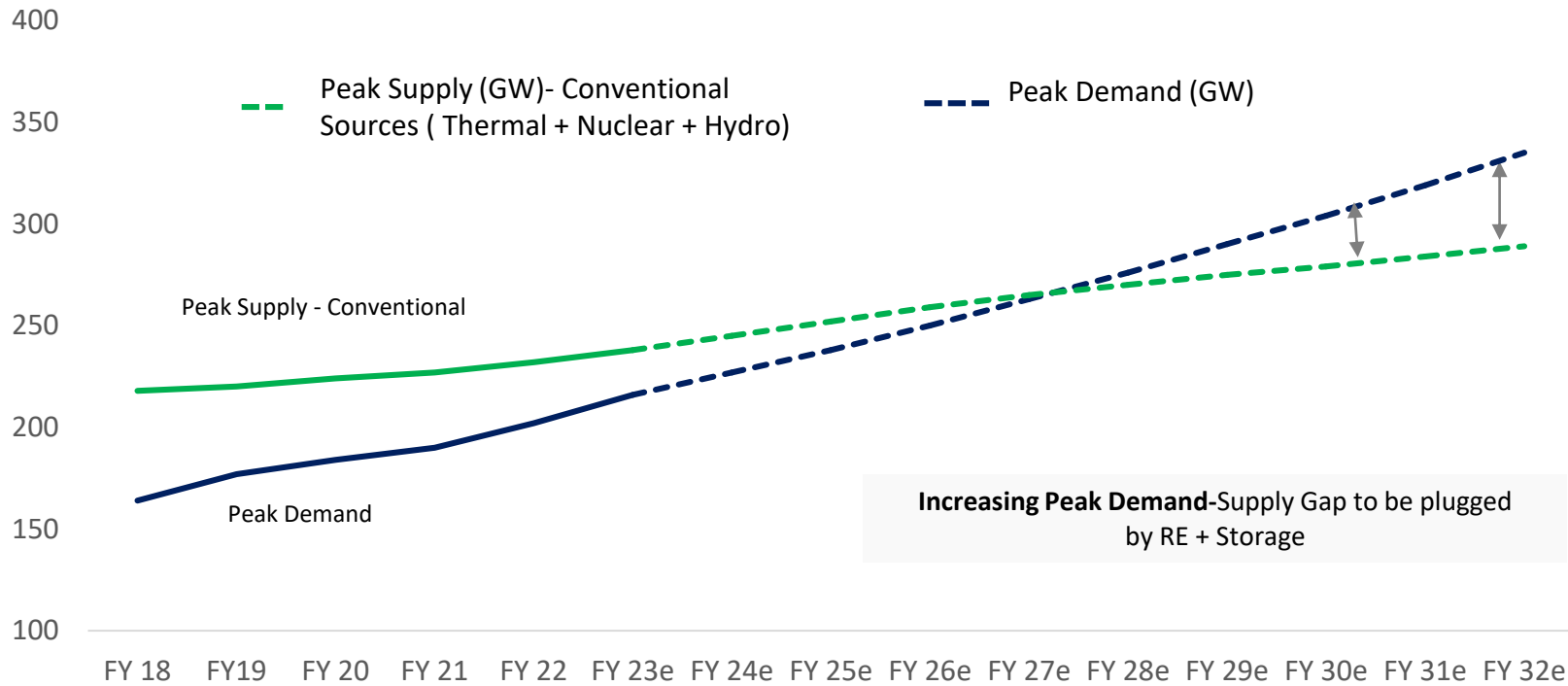
Shift from Thermal

- Structural shift of industries towards green power to support their ESG mandates

■ Thermal Capacity ■ Large Hydro ■ Nuclear ■ Solar ■ Wind ■ Other Renewables

Energy Storage Solutions critical in India's Energy Transition

Peak Demand vs Supply from Conventional Sources (GW)



JSW Energy to investment in ESS and Electron to Molecules businesses, making it future ready

- Intermittency of renewable power stems the need for storage solutions or using excess renewable energy for production of green chemicals
- We intend to be future ready by foraying into

Energy Storage Solutions (ESS)



Hydro Pumped Storage (PSP)



Battery Energy Storage System (BESS)

Electrons to Molecules



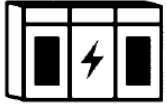
Green Hydrogen /Ammonia

Renewable Energy + Storage Solutions required to plug increasing Peak Demand-Supply Gap going forward

- Peak Power Demand is expected to grow at a CAGR of ~5% between FY22-32
- Hence, Increasing gap between Peak Demand and Peak Supply from conventional power sources (Thermal+Nuclear+Hydro) will be needed to be plugged by supply from renewable + storage capacities

Energy Storage Solutions: Battery Energy Storage Solutions (BESS)

India's Market Potential



52GW/258GWh¹ installed capacity by 2032

- Facilitate RE capacity integration by addressing intermittency
- Balancing grid against load fluctuations
- Better utilization of transmission infrastructure



Supporting India's Clean Energy commitments

- Waiver of ISTS charges allowed for BESS
- Integral to RTC power infrastructure for clean energy

JSW's Plans

- ✓ LoAs received for SECI bid for the utility scale pilot BESS project (500MW/1000MWh)
 - Capacity charge of ₹10.85 Lakh per MW per month
 - Pilot project is Build Own Operate Transfer (BOOT) with tenure of 12 years
 - Project will have Battery Storage Purchase Agreement for 60% of the capacity with SECI and balance is open for sale
 - Identified site is at Fatehgarh, Rajasthan
 - Participate in ancillary market with the open capacity

Energy Storage Solutions: Hydro Pumped Storage Projects (PSP)

India's Market Potential



Only 3.3 GW operational out of 97 GW potential

- Hydro Power Obligations to bolster development of PSPs
- Waiver of ISTS charges also allowed for Hydro PSP



Supporting 50% energy requirement from renewable sources by 2030

Hydro PSP to provide adequate peaking reserves, reliable grid operation and integration of variable renewable energy sources

Key Highlights:

- Long Project Life
- Low construction cost and better PLF vis-à-vis conventional hydro projects
- Supports Grid Stability
- High tariffs with attractive returns

JSW's Plans

State	MoU/LoI Dates	Capacity (GW)
Maharashtra	Sep-21 Sep-22	2.5
Telangana	Apr-22	1.5
Uttar Pradesh	Nov-22	1.2
Rajasthan	Dec-21	1.0
Chhattisgarh	Aug-22	1.0
Karnataka	Jun-22 Nov-22	0.4
Resources Secured		7.6
Target (by 2030)		10.0

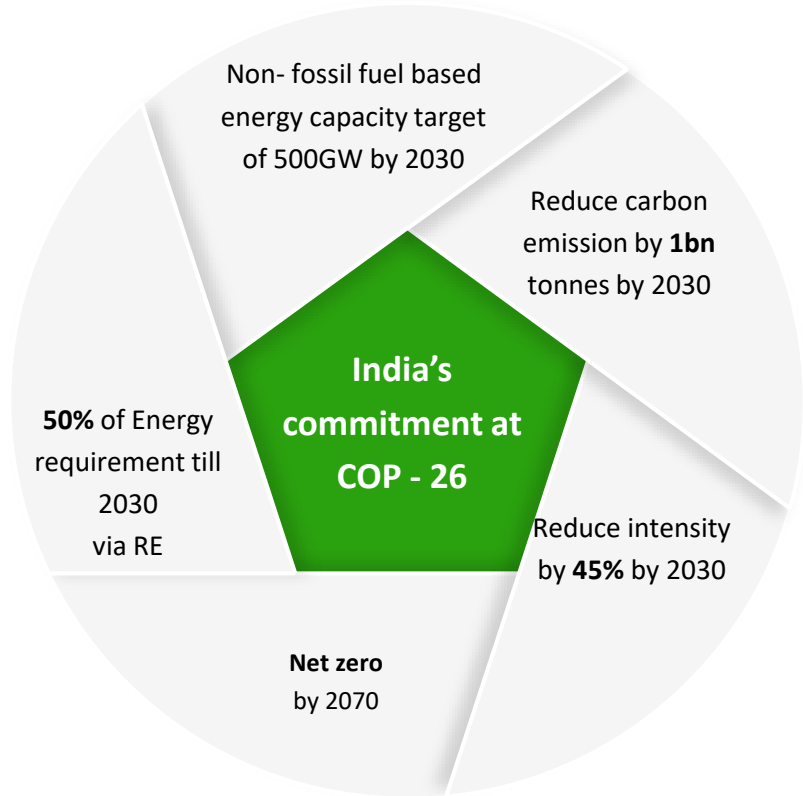
- ✓ Benefit of JSW's proven experience with managing the largest hydro portfolio in the private sector
- ✓ PSPs integrated with RE power can provide firm despatchable RE power

Expected Timeline:

- Project Clearances : 3 Years
- Project Construction: 3 Years

First project will be a captive PSP at Vijayanagar, construction expected to commence in CY2023

Electrons to Molecules: Green Hydrogen Potential



Advantage India

Significant Hydrogen demand

Current demand ~6 MMT expected to grow to ~24 MMT by 2050

Huge RE potential

Existing RE capacity of ~165 GW (incl. Hydro)
Target – 50% of energy requirement from RE by 2030

Low Tariffs

RE tariffs in India (INR ~ 2-2.5)

India's Import Bill

India is 3rd largest consumer of oil & gas, imports ~85% of oil and ~50% of Gas

Clean energy Commitment

GH adoption contributes to emission reduction & meet energy demand

Infrastructure build

Large part of India's infrastructure needs to be built out, allows better integration

Grey Hydrogen: Currently, more than 95% of hydrogen is produced from fossil fuels via carbon intensive processes.

Blue Hydrogen: Grey hydrogen whose CO₂ emitted during production is sequestered via carbon capture and storage (CCS)

Green Hydrogen: Low or zero-emission hydrogen produced using clean energy sources

Main production route

Steam Methane Reforming (SMR)

Coal Gasification

Characteristics



Intense CO₂



Low Cost

Main production route

+ SMR + CCS

+ Coal Gasification + CCS

Characteristics



Low CO₂



High Cost

Main production route

+ Electrolysis using renewables

Characteristics



Zero CO₂



High Cost

India's Market Potential

H₂

Significant H₂ demand

- India - 2nd largest hydrogen demand base in the world
- H₂ demand expected to grow to ~24 MMT by 2050; can spur USD 65-70 Bn investments in incremental RE capacity



National Hydrogen Mission

- Announced in the Union Budget 2021 for making a hydrogen roadmap for the country
- Government announced Green hydrogen obligation for Fertilizers and Refinery sector
- Incentives of ₹19,744 crores announced for development of green hydrogen capacity of at least 5 MMT/annum



India's Clean Energy commitments

- Green H₂ adoption can contribute to emission reduction in allied sectors
- India has low RE tariff's: Electricity is ~80% of Cost of Green H₂

JSW's Plans

- ✓ To tap significant clean energy market opportunity in India and become a front-runner in a future hydrogen economy
- ✓ Utilisation potential across:
 - green steel making
 - green ammonia
 - chemical derivatives
 - hydrogen mobility
 - other industrial applications

Compelling Investment Story



Efficient capital allocation track record

- Proven project execution excellence
- Sound operating efficiency characterized by one of the lowest O&M Cost/MW

Proven project execution and operational excellence...

Prudent and consistent capital allocation strategy for growth over a 25 year history

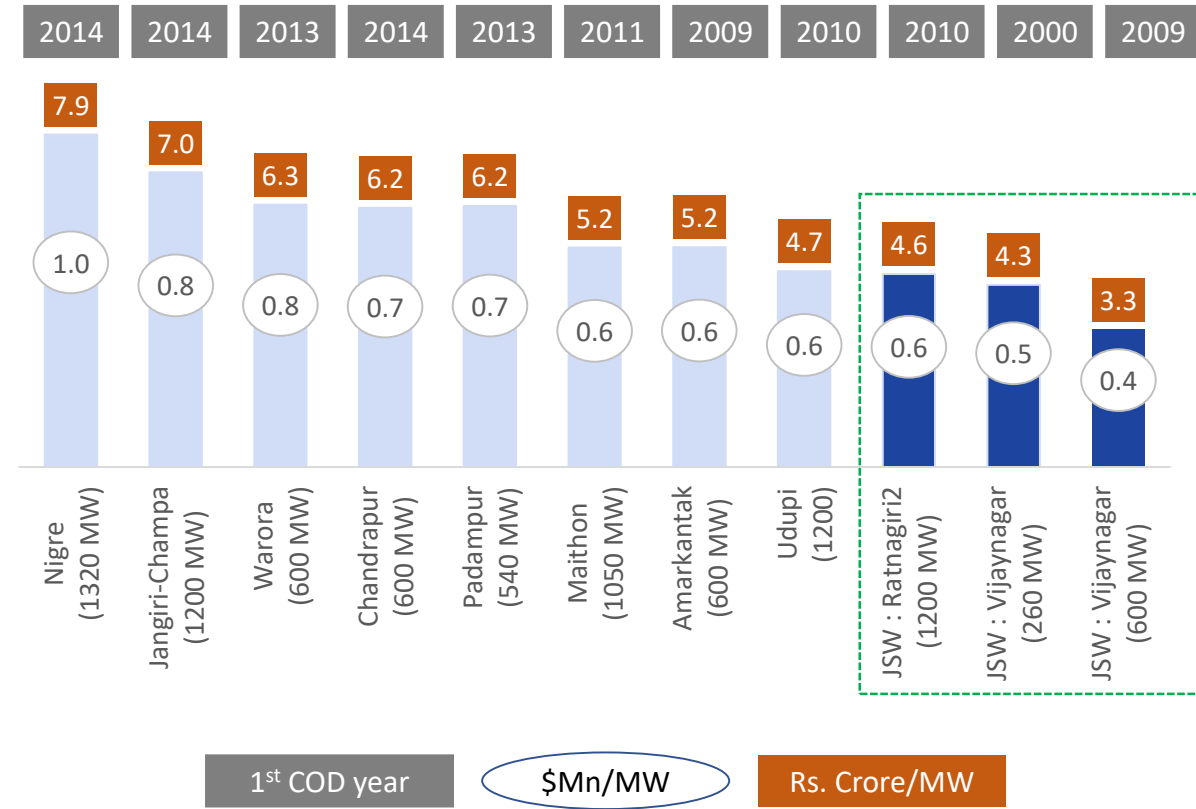
Business model resilient despite several sectoral headwinds over the last decade

Sound operating efficiency characterized by one of the lowest O&M Cost/MW

O&M Expenses (Rs Mn/MW)



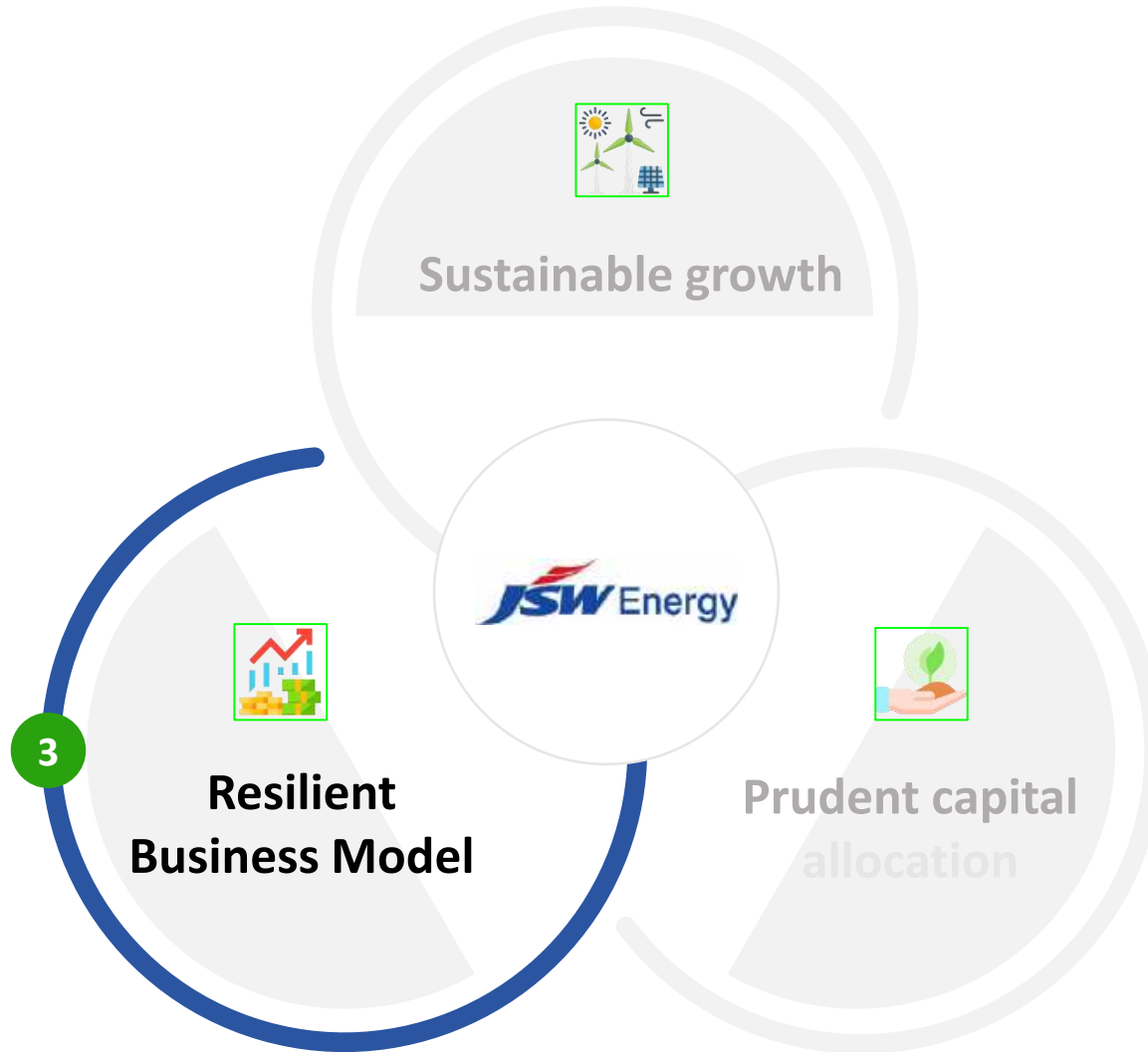
One of the lowest project execution cost in the industry



Compelling Investment Story

Resilient Business, Consistent Performance and Strong financials

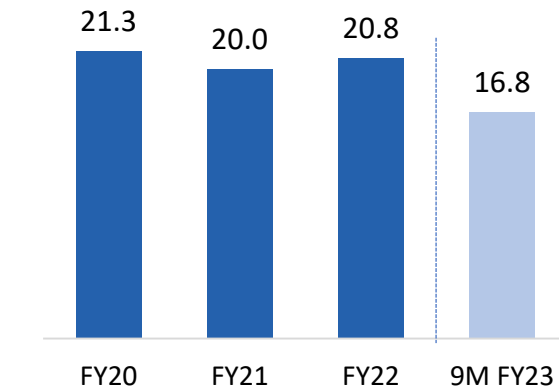
- Steady operations and robust financials
- Best-in class balance sheet and cash flows to support renewable-led growth



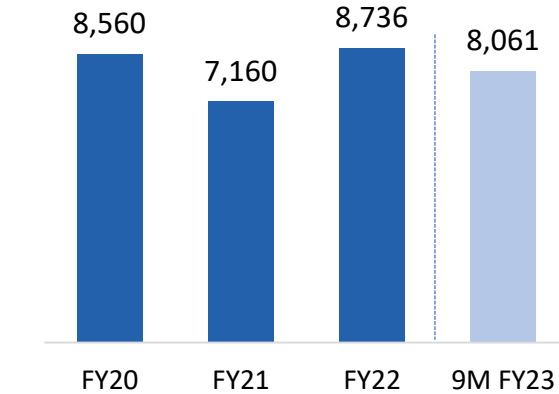
Steady Operations and Robust Financials

Consistent Asset Performance

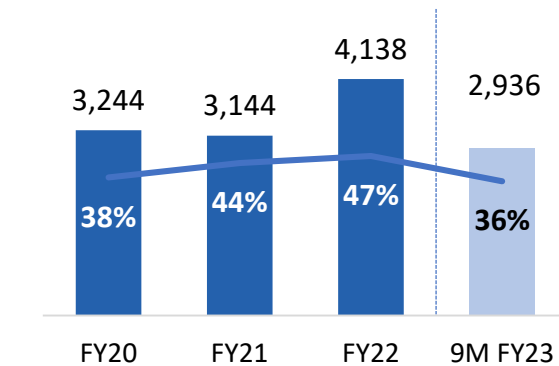
Net Generation (BUs)



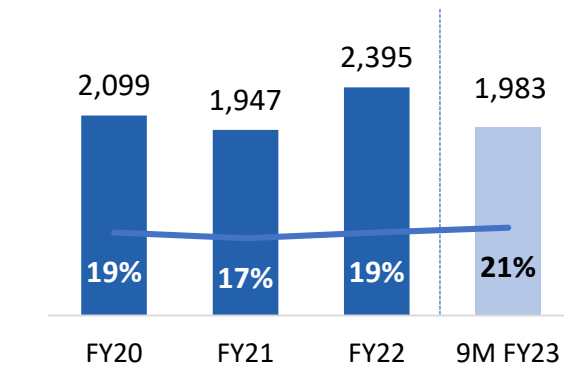
Total Income¹ (₹ Crore)



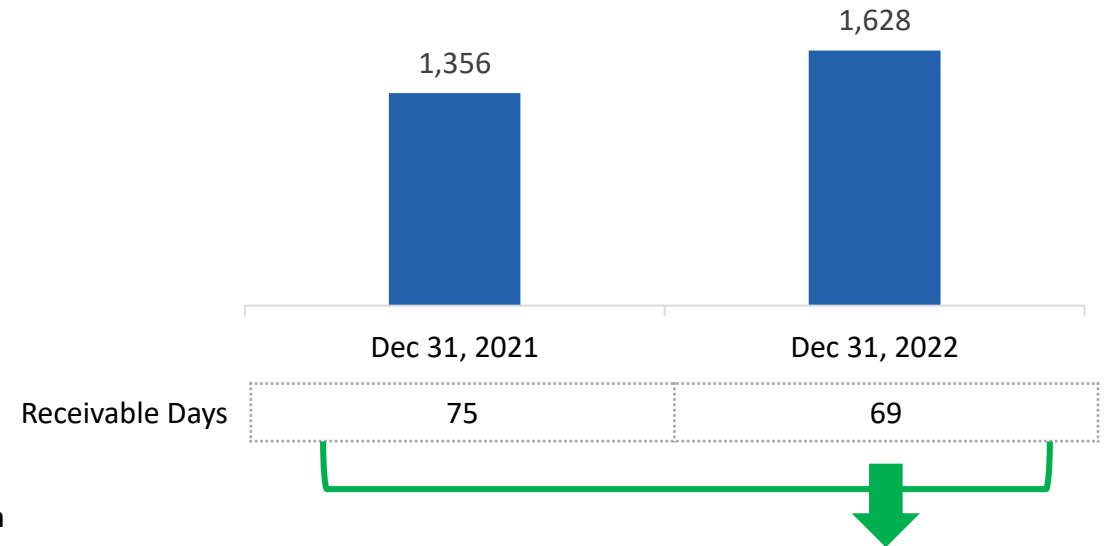
EBITDA & EBITDA Margin (₹ Crore)



Cash PAT (₹ Crore) and Return on Adj.Net Worth



Low Trade Receivables²



- ✓ All plants placed favourably in States' Merit Order Dispatch
 - Further, Hydro plants under 'Must-run status' with no scheduling risk
- ✓ No history of any bad debts from routine long term trade receivables
- ✓ Payment security mechanism in force for power tied under long term PPA with discoms
- ✓ Recovery of late payment surcharge in case of delayed payments from discoms

1. Not comparable YoY in FY21 due to Change to Job Work Model Partially 2. Includes Unbilled Revenue

Best-in class balance sheet & cash flows to support renewable-led growth

Large balance sheet headroom to pursue growth opportunities

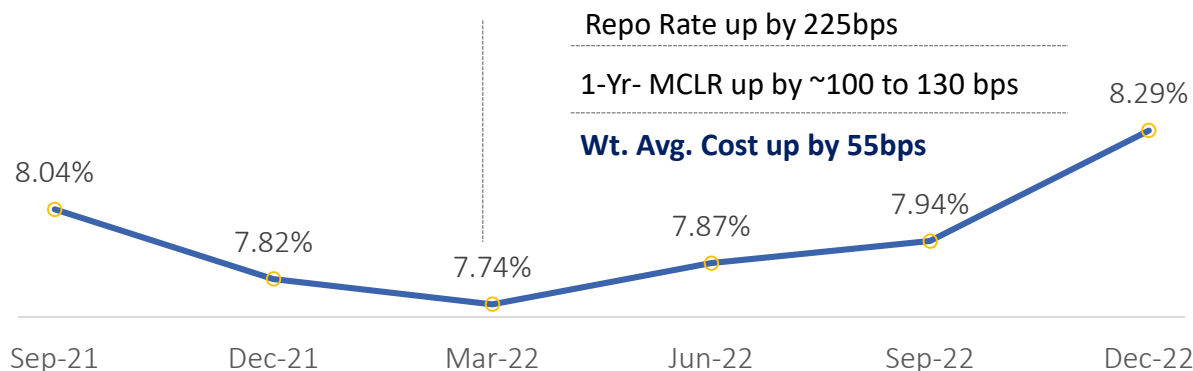
Strong credit metrics :

Figures in ₹ Crore	As on Dec 31, 2022
Networth	18,392
Net Debt	9,840
Net Debt/EBITDA	2.30
Net Debt/Equity	0.54
Wtd. Average Cost of Debt	8.29%

• Healthy Credit Ratings and access to diverse pools of liquidity

- ✓ India Rating & Research: AA (Stable outlook)
- ✓ ICRA Ltd: ICRA AA (Stable)

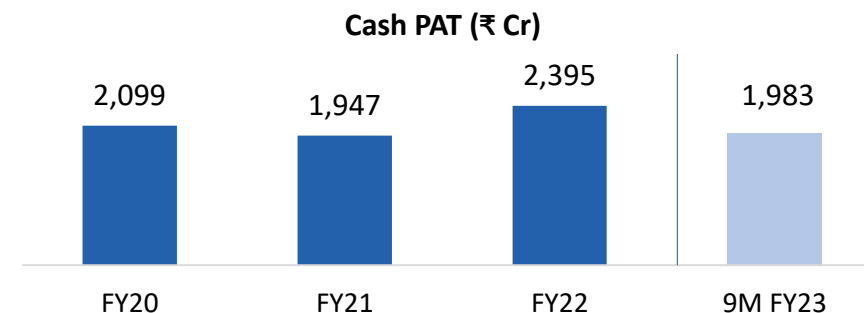
Wt. Average Cost of Debt



Healthy internal accruals to support growth

Operational Portfolio (4.8 GW):

- **Steady operations and robust financial:** Track record of strong yearly cash profits of ~₹2,300 Crores¹



▪ Generating healthy CF & mid-teen equity returns

- 85% of portfolio tied-up under Long Term PPA

- ✓ Remaining Avg. Life of PPA: ~19 years
- ✓ Remaining Avg. Life of Assets: ~28 years

▪ Strong Liquidity with healthy cash balances²: ₹3,029 Crore

▪ Financial flexibility enhanced by equity investments:

- ✓ JSW Steel shares: 7 crore shares held (Value as on Dec 31, 2022: ~ ₹5,379 Crore)

1. Applying the average return of 18% on current adjusted net worth 2. Includes unencumbered bank balances, FDs, and liquid mutual funds

Risk Mitigation










Adequately addressing key risks and concerns (1/2)

Key Risks/Concerns	Favourable Policy Support and Market Interventions	Mitigation Strategy by JSW Energy
Demand risk (Clearing of PPA Backlogs)	<ul style="list-style-type: none"> ▪ Well established central agencies (SECI, NTPC) for managing PPAs ▪ Discoms/offtakers entering into new renewable long-term PPAs at commercially attractive tariff given pick-up in economic activity resulting in strong spot electricity prices ▪ Renewable Power Obligation for RE and Hydro Projects, energy storage obligations also introduced thereby promoting energy storage projects 	<ul style="list-style-type: none"> ▪ Existing portfolio: 85 % PPA signed which forms about 95% of EBITDA ▪ U/C portfolio: PPA signed for all renewable projects ▪ Mix of Discoms and C&I customer base ▪ Targeting new areas of demand through Green Hydrogen and Energy storage
Receivable risk	<ul style="list-style-type: none"> ▪ Payment security through mandatory provision of LCs before power off-take ▪ Late payment surcharge fees are charged for delays ▪ Cabinet approves US\$37 bn for power discom reforms ▪ Defined framework for recovery of costs due to 'Change in Law' 	<ul style="list-style-type: none"> ▪ All plants placed favorably in States' Merit Order Dispatch ▪ Portfolio diversified across multiple off-takers ▪ No history of any bad debts from routine LT trade receivables ▪ Recovery of late payment surcharge in case of delayed payments from discoms
Domestic industry for capacity addition	<ul style="list-style-type: none"> ▪ ~\$2.9 bn production linked incentive scheme for high efficiency PV modules ▪ ~\$2.2 bn scheme for ACC batteries 	<ul style="list-style-type: none"> ▪ Technology agnostic approach ▪ To benefit from domestic capacity addition

Adequately addressing key risks and concerns (2/2)

Key Risks/Concerns	Favourable Policy Support and Market Interventions	Mitigation Strategy by JSW Energy
Offtake Risk (revenue/volume)	<ul style="list-style-type: none"> Must-run status for renewable; Rule notified to provide regulatory support towards 'Must-run' status - Electricity (Promotion of generation from renewable sources of energy by addressing Must Run and other matters) Rules, 2021 	<ul style="list-style-type: none"> Hydro plants under 'Must-run status' with no scheduling risk ~98% of LT PPA under two-part tariff; Plant Availability maintained above normative across locations to recover fixed charge; fluctuations in fuel cost and forex are completely pass through
Soundness of Auction framework	<ul style="list-style-type: none"> Efficient and Transparent competitive bidding process Innovative models emerging: Hybrid solar, Renewable-plus-storage , Round-the-clock (RTC) renewable power 	<ul style="list-style-type: none"> Highest ever single bid standalone capacity secured under any of the Indian renewable auction – 810 MW wind capacity awarded under SECI IX Participating in RTC bids
Grid Infrastructure capability	<ul style="list-style-type: none"> Development of dedicated Green Energy Corridors for evacuating RE capacity 	<ul style="list-style-type: none"> Pump Storage and battery storage solutions offer opportunity to address grid balancing issues Received LOAs for 500MW/1,000 MWh SECI battery energy storage project

JSW Energy : Key Highlights

 Proven Execution Excellence	<ul style="list-style-type: none">✓ Superior project execution skills: Projects set-up in lowest cost & time✓ Differentiated business strategy for growth to 20 GW, driven by Renewable✓ Foraying in New Energy Platforms: Green Hydrogen, Energy Storage, Energy Products & Services
 Focus on Sustainability	<ul style="list-style-type: none">✓ Strong Focus on ESG – Leadership band with ‘A-’ score in the 2021 CDP Climate Change assessment✓ Amongst the Highest rated power generation company in India by various independent ESG rating agencies✓ To be Carbon Neutral by 2050; Committed to set science based emission reduction targets (SBTi)
 Efficient O&M	<ul style="list-style-type: none">✓ Sound operating efficiency characterized by one of the lowest O&M costs in the sector✓ Global best practices & recognition in Safety: Barmer and Ratnagiri Plants awarded ‘SWORD OF HONOUR’ by British Safety Council
 Steady EBITDA and Cash accruals	<ul style="list-style-type: none">✓ 85% of total portfolio tied up with LT PPA providing ~95% EBITDA and Cashflow generation✓ Two-part tariff structure mitigating fuel and forex risk
 Healthy Receivables	<ul style="list-style-type: none">✓ Receivables days at low levels in DSO terms.✓ Favorable placement in Merit Order Despatch & diversified off-takers mitigate Receivable risk
 Strong Balance Sheet	<ul style="list-style-type: none">✓ Amongst the Strongest Balance Sheet in the sector: 2.30x Net Debt/EBITDA; 0.54x Net Debt/Equity✓ Healthy debt metrics to be maintained while pursuing value accretive growth✓ A healthy cash balance of ₹3,029 Cr and financial flexibility with JSW Steel equity shareholding
 Low Cost of Funding	<ul style="list-style-type: none">✓ Proactive Debt Management: Weighted average cost of debt at 8.29%✓ Raised a US\$ 707 million green bond to refinance debt for hydro entity in May’21

Investor Relations Contact:

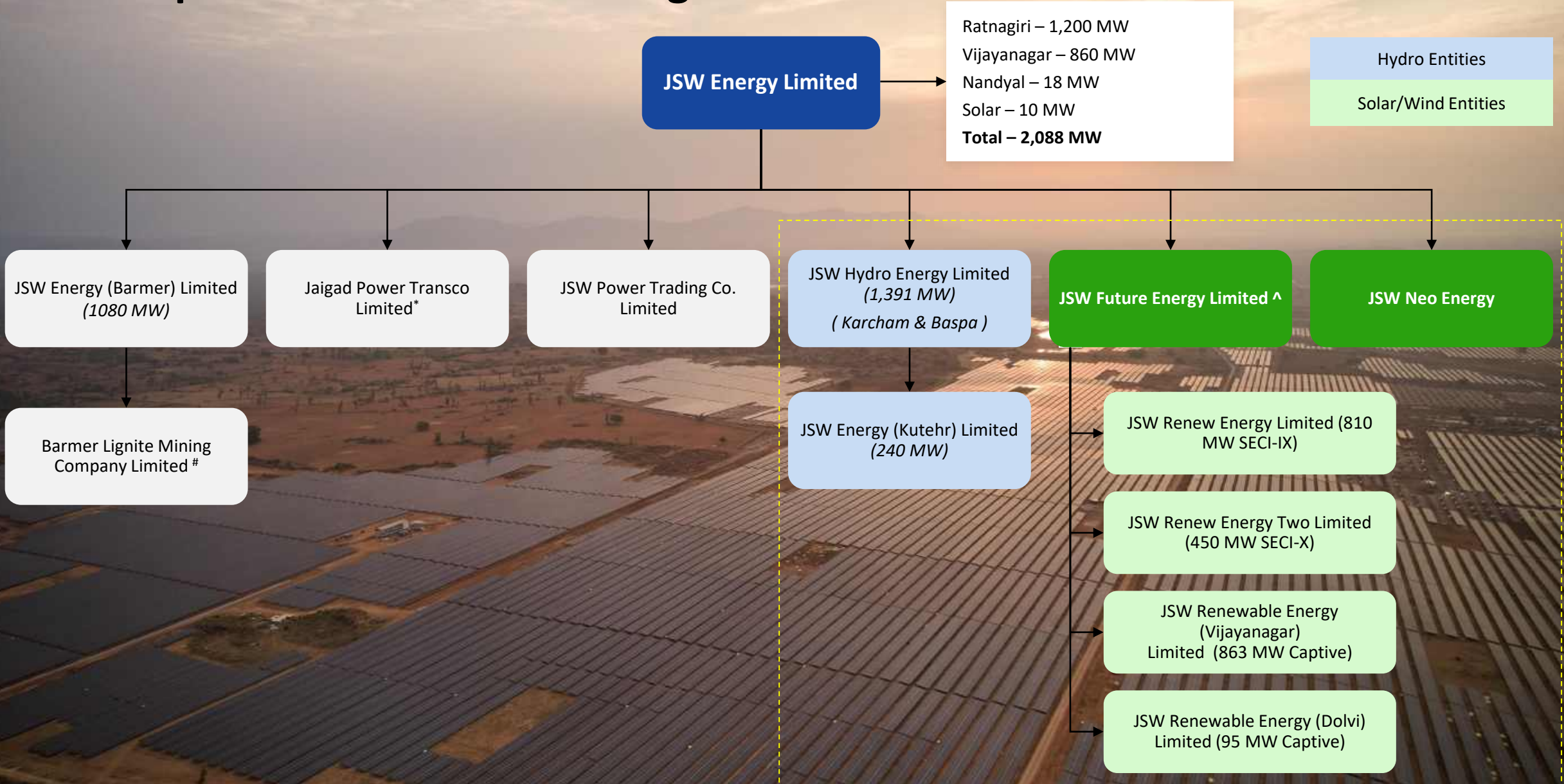
ir.jswenergy@jsw.in

ESG Data Profile: [Link](#)

Annexures



Broad Corporate Structure : Existing



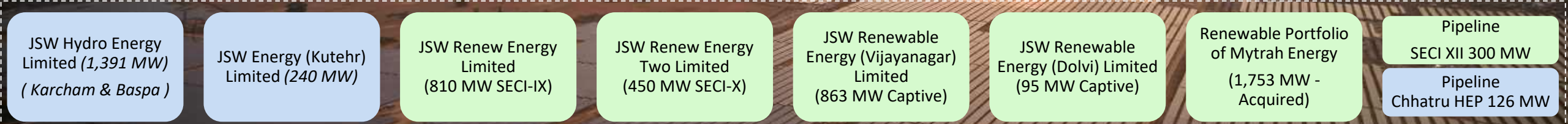
All subsidiaries shown are WOS except the following - * JPTL is a 74:26 JV between JSWEL and Maharashtra State Electricity Transmission Company Limited (MSETCL) # BLMCL is a 51:49 JV between Rajasthan State Mines and Minerals Limited (RSMML) and JSWE(B)L ^ JSW Future Energy Limited will be merged with JSW Neo Energy Limited under the scheme of Amalgamation wherein all the assets and liabilities of JSW Future Energy Limited will be transferred to JSW Neo Energy Limited. Approved by NCLT subject to certain customary approvals.

JSW Neo Energy – Green Energy Vehicle of JSW Energy (Post-Restructuring)

JSW Energy Limited

JSW Neo Energy *
6,028 MW

Hydro Entities
Solar/Wind Entities



6.0 GW

Diversified Asset Portfolio
(100% Renewable)

=

1.6 GW

Installed Capacity
Renewable – 1,643 MW

+

1.8 GW

Under Acquisition
Renewable Portfolio of
Mytrah Energy (1,753 MW)

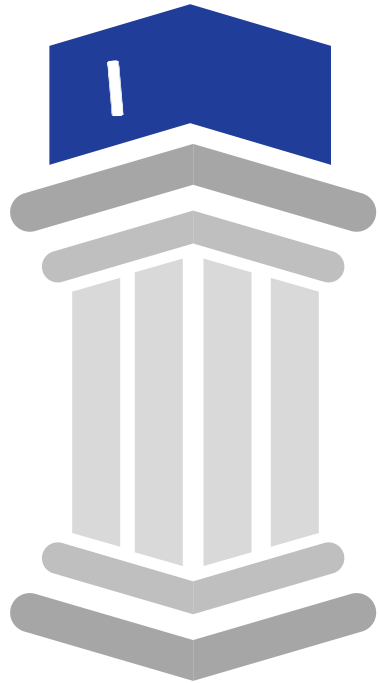
+

2.7 GW

Under-Construction
Entirely renewable - 2,206 MW
Pipeline
Entirely renewable - 426 MW

* Corporate structure post Acquisition and restructuring.
All subsidiaries shown are wholly owned subsidiaries

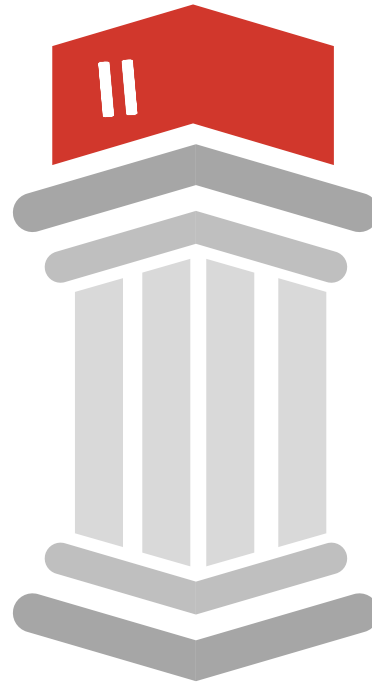
Value Accretive Business Model



Prudent selection of growth opportunities

- Bidding based on P90 generation assumption
- Conservative Interest rate assumptions
- Targeted selection- Targeting a niche segment of market offering healthy returns – Mid teen IRRs

Implementation De-risking



Life cycle approach

- Land acquisition, De- scoped project construction, power evacuation and O&M
- Power evacuation
- Proactive approach to get the PPA/PSA executed and tariff adoption

Execution Efficiency

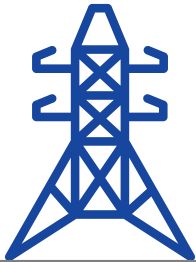


Group's project execution excellence

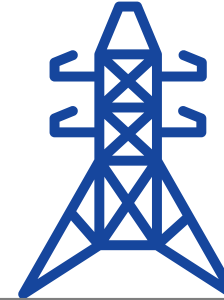
- Fast execution while ensuring all safety guidelines

Growth Framework leading to industry-leading returns

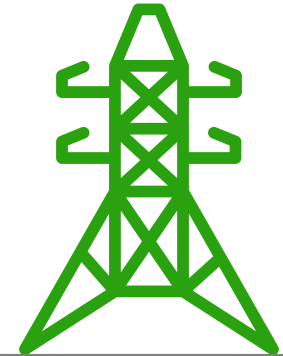
Single digit to lower teen IRR%



Mid-teen IRR %



High-teen Returns Realized



Equity IRRs

Current market returns due to highly competitive tariffs¹

Pre-Bid Preparation

- Bidding with conservative assumptions
- Targeting a niche market segment offering healthy returns
- Pre-bid resources identification to reduce uncertainty on land & connectivity

Project Execution

- No Turn key EPC contracts: instead creating value with split package approach
- Modular commissioning; Early onset of revenues
- Debt loading coinciding with revenue generation

JSW Energy Target Returns

Targeting mid-teen post-tax equity IRRs

Potential Upside Levers Post COD

- Cost reductions due to Self O&M
- Technology Improvement
- Reducing Interest cost via refinancing

Realized Returns

Enhancement In Returns Realized

Conservative assumptions for business model



Targeting India's ~4% of incremental renewable capacity addition to reach 20 GW by 2030
Resulting in prudent selection of growth opportunities to target a niche segment of market offering healthy returns – **Mid teen IRRs**



High quality offtakers - SECI and Captive PPAs with JSW Group companies (strong credit ratings) at arm's length pricing



Modular nature of commissioning of projects; potential for early onset of revenues and earnings



Bidding with prudent assumptions and approach backed by strong data backup

- ✓ Bidding based on **P90 generation assumption**
- ✓ Reasonable Interest rate assumptions
- ✓ Targeting **mid-teen IRRs**

Long Term PPA ensuring steady cashflow



Typical timelines for PPA signing & Tariff adoptions

- ✓ PPA signing – 90 days from LoA issuance
- ✓ Tariff Adoption – 120 days from the Effective date of the PPA

JSW approach:

- ✓ Proactive approach **to get the PPA/PSA executed and tariff adoption**
- ✓ Faster resolution of proposed changes in PPA in consultation with SECI & Discoms
- ✓ Quick submission of requisite information and performance bank guarantees to cut short timelines
- ✓ Continue follow up with SECI, Discoms & Regulators to fast track tariff adoption process



Project Construction and Land Acquisition

- De-scoping of EPC packages to have competitive edge
- Synergies with group businesses (steel, cement, paints, etc.) for better material availability
- Systematic approach of deploying in-house experienced land acquisition team in all resource-rich states
- Deployed experienced legal teams for title search and execution of lease deeds; dedicated team for securing Right-of-Way (RoW)

Power Evacuation

- Strategic selection of ISTS substations for connectivity with high capacity margins to facilitate future expansions
- Identification of land parcel near to substation in order to reduce transmission line cost
- Effective due diligence & route surveys for risk mitigation
- Futuristic planning & designing to optimize use of evacuation infrastructure



- Robust selection process through competitive route; Award of packages to best-in-class / Tier-I vendors only
- Comprehensive Contracts with strong performance & product warranty and performance bank guarantee provisions
- Developing strong relationships with all major OEMs, EPC contractors, BoP contractors

- Dedicated team for quality assurance
- Standard operating procedure for quality checks
- Special checks on quality & type test certifications
- Implementation of TQM, ISO and other relevant standards

- Skilled in-house O&M team
- Continuous implementation of innovative practices to further optimize O&M cost through TQM
- Operating Stations supported by experienced professionals at corporate office in areas such as Policy, Regulatory, Design & Engineering, Finance, Construction & Maintenance and HR

Execution Efficiency

One of the fastest execution of the wind project



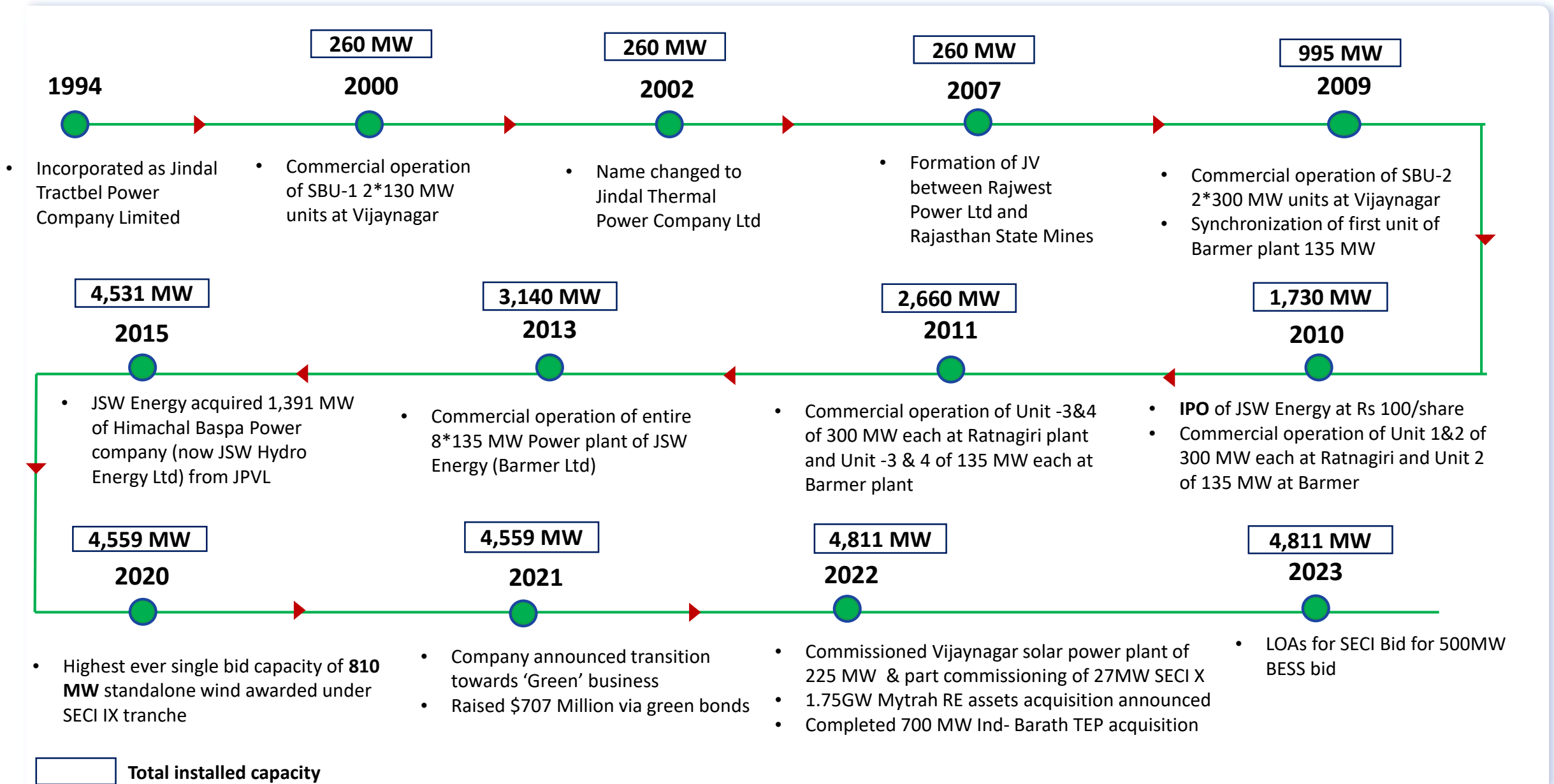
- Received part-CoD for 27MW of SECI X wind project in a progressive commissioning

Kutehr project completion expected well before scheduled timelines



- 90% tunnelling (19.0 km) tunnelling work completed at the end of Q3FY23
- Expected to be completed by Sept 24 well ahead of scheduled timeline

JSW Energy's Corporate Journey



Robust Cash Returns on Adjusted Net Worth

₹ crore (Unless mentioned otherwise)

Quarter ended	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22
Reported PAT	107	201	339	324	864	560	466	180
Add: Depreciation	294	288	284	281	277	289	294	295
Add/(less): Deferred Taxes	27	21	32	26	(7)	84	42	14
(Less): Dividend Received	-	-	(46)	-	-	-	(122)	-
Add/(less): One-offs*	(83)	-	-	-	(492)	(120)	0	-
Cash PAT	346	510	610	631	643	813	681	489
Cash PAT (TTM)	1,947	1,940	1,899	2,097	2,395	2,697	2,767	2,625
Adjusted Net Worth**	11,473	11,529	11,475	11,830	12,688	12,952	13,491	13,446
Cash Returns on Net Worth (%)	17%	17%	17%	18%	19%	21%	21%	20%

Strong cash returns of >18% translates to yearly cash profits of ~₹2,300 crores

*Refer note 4 of [Q4FY21](#) release and note 5 of [Q4FY22](#) release for Mar-21 and Mar-22 one-offs, respectively. Jun-22: Exceptional items ₹ 120 crore represents reversal of loss allowance made in earlier years on loan given to a party.

** Adjustment in net worth by excluding the value of shares of JSW Steel